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Supreme Court, U.S.
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IN THE
Supreme Court of the United States

OCTOBER TERM, 1986

THE STATE OF NEW YORK; ROBERT ABRAMS, ATTORNEY GENERAL OF THE STATE OF NEW YORK; JAMES P. CORCORAN, SUPERINTENDENT OF INSURANCE OF THE STATE OF NEW YORK; and the NEW YORK STATE DEPARTMENT OF INSURANCE,

Petitioners,

vs.

ELIZABETH DOLE, SECRETARY OF THE DEPARTMENT OF TRANSPORTATION; THE DEPARTMENT OF TRANSPORTATION; DIANE STEED, ADMINISTRATOR OF THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION; and the NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION,

Respondents.

**APPENDIX TO PETITION FOR A WRIT OF
CERTIORARI TO THE UNITED STATES
COURT OF APPEALS FOR THE DISTRICT OF
COLUMBIA CIRCUIT**

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December 17, 1986

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STATE FARM MUTUAL AUTOMOBILE INSURANCE
COMPANY, et al.,

Petitioners,

— v. —

Elizabeth DOLE, Secretary of the Department of
Transportation, et al.,

Respondents.

AMERICAN INSURANCE ASSOCIATION,

Petitioner,

— v. —

Elizabeth DOLE, Secretary of the Department of
Transportation; the Department of Transportation;
Diane Steed, Administrator of the National Highway Traffic
Safety Administration; and the National Highway
Traffic Safety Administration,

Respondents.

NATIONWIDE MUTUAL INSURANCE COMPANY,

Petitioner,

— v. —

Elizabeth DOLE, Secretary of the Department of
Transportation; the Department of Transportation; Diane
Steed, Administrator of the National Highway Traffic Safety
Administration; and the National Highway Traffic
Safety Administration,

Respondents.

NATIONAL ASSOCIATION OF INSURANCE
COMMISSIONERS,

Petitioner,

— v. —

Elizabeth DOLE, Secretary of the Department of
Transportation; the Department of Transportation;
Diane Steed, Administrator of the National Highway
Traffic Safety Administration; and the National Highway
Traffic Safety Administration,

Respondents.

The STATE OF NEW YORK, Robert Abrams, Attorney
General of the State of New York, James P. Corcoran,
Superintendent of Insurance of the State of New York and
the New York State Department of Insurance,

Petitioners,

— v. —

Elizabeth DOLE, Secretary of the Department of
Transportation, et al.,

Respondents.

Nos. 84-1301, 84-1459 to 84-1462.

United States Court of Appeals, District of Columbia Circuit.

Argued March 11, 1986.

Decided September 18, 1986.

Petitioners brought action challenging Department of Transportation's regulations with respect to passive restraints in automobiles. The Court of Appeals, Starr, Circuit Judge, held that: (1) attack on provision by which Secretary of Transportation may rescind requirement for phased-in installation of automatic protection devices in new cars should states covering two-thirds of nation's population enact mandatory safety belt laws was not ripe for judicial review, and (2) New York's challenge to rescission rule, although ripe, failed on the merits.

Petition of New York denied, all other petitions dismissed.

Mikva, Circuit Judge, concurred in part and dissented in part and filed opinion.

1. Federal Courts 12

The ripeness doctrine limits the power of federal courts in adjudicating disputes.

2. Administrative Law and Procedure 704

Even when agency action is final and issues presented are purely legal, court may nonetheless properly deem the matter unfit for resolution if postponing review would provide for more efficient examination and disposition of the issues.

3. Administrative Law and Procedure 701

For institutional interest in deferral to be outweighed, postponing review must impose hardship on complaining party that is immediate, direct, and significant.

4. Administrative Law and Procedure 701

Agency enforcement policy may impose requisite hardship on complaining party to outweigh postponing of review of issue even before policy is implemented if it would unreasonably prompt regulated industry, unwilling to risk penalties by defying the policy, to undertake costly compliance measures, but party's

allegation of hardship will be found wanting if there are too many "ifs" in the asserted causal chain linking agency's action to alleged hardship, or if asserted hardship is not sufficiently concrete.

5. Administrative Law and Procedure 701

If interests of court and agency in postponing review outweigh interests of those seeking relief, settled principles of ripeness squarely call for adjudication to be postponed.

6. Administrative Law and Procedure 704

Automobiles 10

Although Secretary of Transportation's rule, which would rescind requirement of phased-in installation of automatic protection devices in new cars if states covering two-thirds of the nation's population enact mandatory safety belt usage laws, constituted final agency action, issue of whether rescission provision was arbitrary and capricious was not ripe for review in view of fact that institutional interest in avoiding speculative controversies was powerfully present because evidence indicated that possible rescission would likely never occur and such institutional interests was not counterbalanced by requisite showing of hardship to challengers of rule. National Traffic and Motor Vehicle Safety Act of 1966, §§ 1 et seq., 103(a), 15 U.S.C.A. §§ 1381 et seq., 1392(a).

7. Administrative Law and Procedure 704

Automobiles 5(2)

Issue raised by petitioners as to whether Secretary of Transportation's automatic rescission of requirements of phased-in installation of automatic protection devices in new cars was contrary to Safety Act was not ripe for adjudication in view of the fact that rescission was unlikely to occur and petitioner's harm would occur only if uniform standard was rescinded. National Traffic and Motor Vehicle Safety Act of 1966, § 1 et seq., 15 U.S.C.A. § 1381 et seq.

8. Administrative Law and Procedure 704**Automobiles 10**

New York's claim that Secretary of Transportation was attempting, through regulation providing for automatic rescission of rule requiring phased-in installation of automatic protection devices in new cars if states covering two-thirds of nation's population enact mandatory safety belt usage laws, to exert influence on state legislation, was not ripe for review in view of fact that alleged hardship created by postponing review of issue was insufficient to outweigh institutional interest in postponement.

9. Administrative Law and Procedure 704**Automobiles 10**

New York's challenge to Secretary of Transportation's decision not to require either air bags or nondetachable automatic belts as sole mechanisms for satisfying passive restraint requirement, as being arbitrary and capricious, was ripe for review in view of fact that New York alleged sufficient hardship which was not counterbalanced by institutional interests in postponing review.

10. Automobiles 10

Secretary of Transportation's conclusion that nondetachable seat belt was the most coercive type of automatic restraint and that imposing that particular requirement would create a serious adverse public reaction so that detachable seat belts as well as nondetachable seat belts would meet statutory standard for automatic restraints was not arbitrary and capricious.

11. Automobiles 10

Secretary of Transportation's failure to mandate air bags in all cars under rule requiring phased-in installation of automatic protection devices in new cars was not arbitrary and capricious in light of cost factors and contrary public opinion surveys.

Petitions for Review of the Orders of the National Highway Traffic Safety Administration.

James F. Fitzpatrick, with whom Michael N. Sohn, John M. Quinn, Merrick B. Garland and Charles A. Taylor, III, Washington, D.C., were on the brief, for petitioners, State Farm Mut. Auto. Ins. Co., et al. in Nos. 84-1301, 84-1459 and 84-1460.

Melvin Goldberg, with whom Robert Abrams, Peter Bienstock, Paul M. Glickman and Daniel D. Kaplan, New York City, were on the brief, for petitioners, The State of N.Y., et al. in No. 84-1462.

Robert H. Myers, Jr., Washington, D.C., was on the brief, for petitioner, Nat. Ass'n of Ins. Com'rs in No. 84-1461.

Douglas Letter, Atty., Dept. of Justice, with whom Richard K. Willard, Acting Asst. Atty. Gen., Dept. of Justice, Kenneth N. Weinstein, Deputy Asst. Gen. Counsel, Dept. of Transp., Frank Berndt, Chief Counsel, Nat. Highway Traffic Safety Admin., Paul Blankenstein, Atty., Dept. of Justice and Stephen P. Wood, Atty., Nat. Highway Traffic Safety Admin., Washington, D.C., were on the brief, for respondents in Nos. 84-1301, 84-1459, 84-1460, 84-1461 and 84-1462.

Christopher D. Coppin, Asst. Atty. Gen., State of N.M., Albuquerque, N.M., was on the brief, for amicus curiae, The State of N.M. urging reversal in Nos. 84-1301, 84-1459, 84-1460 and 84-1461.

Philip R. Collins, Washington, D.C., was on the brief, for amicus curiae, Automotive Occupant Protection Ass'n urging reversal in Nos. 84-1301, 84-1459, 84-1460 and 84-1461.

Debbie M. Zuckerman was on the brief, for amicus curiae, Epilepsy Foundation of America, urging reversal in Nos. 84-1301, 84-1459, 84-1460 and 84-1461.

Dennis J. Barbour, Roanoke, Va., was on the brief, for amicus curiae, American Academy of Pediatrics, et al. urging reversal in Nos. 84-1301, 84-1459, 84-1460 and 84-1461.

Jerris Leonard, Washington, D.C., was on the brief, for amicus curiae, Conference of Ins. Legislators urging reversal in Nos. 84-1301, 84-1459, 84-1460 and 84-1461.

Before MIKVA, SCALIA and STARR, Circuit Judges.

Opinion for the Court filed by Circuit Judge STARR.

Opinion concurring in part and dissenting in part filed by Circuit Judge MIKVA.

STARR, Circuit Judge:

These consolidated cases bring us once more into the long-standing controversy over the Department of Transportation's regulations with respect to "passive restraints" in automobiles. Unlike its most recent predecessor, the rule at issue requires the phased-in installation of automatic (i.e., passive) protection devices in new cars manufactured for sale in the United States beginning September 1986.¹ The rule, however, contains a provision under which the Secretary of Transportation will rescind the requirement if, by April 1, 1989, States covering two-thirds of the Nation's population enact mandatory safety belt usage laws. This provision is challenged by all petitioners² as both

¹ "Passive protection" refers to technologies that require no affirmative conduct by the automobile occupant. Examples are: airbags, which are deflated bags stored under the dashboard or in the steering wheel of a car that inflate in front of the occupant very rapidly when a car suddenly decelerates; passive interiors, additional padding and changes to such items as the steering column designated to make a car's interior sufficiently safe even without safety belts or airbags; and automatic safety belts, which move into place automatically when the passenger sits in a seat and closes the door. Automatic belts can be detachable, meaning that they have an easily reachable release mechanism that can be used to disconnect the belt and leave it that way permanently, or nondetachable, meaning that they can only be disconnected by disabling them completely such as by cutting the belt itself.

² Petitioners in this case are State Farm Mutual Automobile Insurance Co.; the National Association of Independent Insurers; Nationwide Mutual Insurance Co.; the American Insurance Association; the National Association of Insurance Commissioners; the State of New York, its Department of Insurance, its Attorney General, and its Superintendent of Insurance; and two individuals, Kent Mason and Patricia Warren.

contrary to the applicable statute and as arbitrary and capricious. While joining in this common attack, the State of New York mounts a separate challenge to the Secretary's decision not to adopt certain alternative standards in the final regulation.

We hold that the attack upon the rescission feature of the regulation is not ripe for judicial review. We also hold that New York's separate challenge, while ripe, fails on the merits.

I

In response to high death tolls on our Nation's highways, Congress enacted the National Traffic and Motor Vehicle Safety Act of 1966 (the Safety Act), 15 U.S.C. §§ 1381 et seq. (1982). The Safety Act was intended "to reduce traffic accidents and deaths and injuries to persons resulting from traffic accidents." *Id.* § 1381. To that end, the statute directed the Secretary to "establish by order appropriate Federal motor vehicle safety standards" that are "practicable, [and] meet the need for motor vehicle safety" *Id.* § 1392(a).

Under this broad mandate, the Department in 1967 promulgated Federal Motor Vehicle Safety Standard 208, which required installation of manual safety belts in all cars. 32 Fed.Reg. 2408, 2415 (1967) (Standard 208). Two years later, however, the Department initiated consideration of automatic or passive occupant protection technology since the level of safety belt usage was quite low. As a result of this inquiry, the Department in 1972 adopted an amendment to Standard 208 requiring "complete passive protection" on automobiles manufactured after August 15, 1975. 37 Fed.Reg. 3911 (1972). Standard 208 was subsequently reconsidered and modified a number of times.³ Ultimately, it was amended to require the phasing-in of passive restraints

³ This history is detailed in *State Farm Mut. Auto. Ins. Co. v. Department of Transp.*, 680 F.2d 206, 210-12 (D.C.Cir. 1982), *vacated sub nom. Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 103 S.Ct. 2856, 77 L.Ed.2d 443 (1983).

beginning with the 1982 automobile model year. 42 Fed.Reg. 34,-289 (1977). This Modified Standard 208 was upheld on review by this Court. See *Pacific Legal Foundation v. Department of Transportation*, 593 F.2d 1338 (D.C. Cir.), *cert. denied*, 444 U.S. 830, 100 S.Ct. 57, 62 L.Ed.2d 38 (1979).

In February 1981, the Department reopened the rulemaking that had produced Modified Standard 208, 46 Fed.Reg. 12,033 (1981). Two months later, it postponed the date on which phase-in of passive restraints was to begin, 46 Fed.Reg. 21,172 (1981), and proposed the possible rescission of the entire standard, *id.* at 21,205. Following a comment period and public hearings, the Department concluded that a reliable basis no longer existed on which to conclude that the passive restraint requirements would have significant safety benefits. In view of the substantial costs of implementing the requirement and the lack of a viable alternative, the agency simply rescinded the standard. 46 Fed.Reg. 53,419 (1981). This action was overturned by this court in *State Farm Mutual Automobile Insurance Co. v. Department of Transportation*, 680 F.2d 206 (D.C.Cir. 1982). The Supreme Court vacated our judgment, but agreed that the agency's action was arbitrary and capricious. The matter was remanded to the Secretary for further consideration. See *Motor Vehicle Manufacturers Association v. State Farm Mutual Automobile Insurance Co.*, 463 U.S. 29, 57, 103 S.Ct. 2856, 2873, 77 L.Ed.2d 443 (1983) (*State Farm*).

It is the Secretary's determination upon reconsideration that is now before us. After suspending the effective date of Modified Standard 208 for one year, 28 Fed. Reg. 39,908 (1983), the Department issued a notice of proposed rulemaking and requested comments regarding what action it should take with respect to passive restraints, 48 Fed.Reg. 48,622 (1983).⁴

* The notice of proposed rulemaking suggested several possible courses of action, including retaining Modified Standard 208 but setting a new compliance schedule; amending Modified Standard 208 to require airbags only, or airbags or non-detachable belts only; rescinding Modified Standard 208; conducting a voluntary demonstration program by automobile manufacturers to gather more data; and seeking mandatory state safety belt usage laws. 48 Fed.Reg. 48,622.

Following the close of the comment period, the Department issued a supplemental notice of proposed rulemaking to gather additional comments. 49 Fed.Reg. 20,460 (1984).⁵ On July 17, 1984, the Department published its final rule amending Modified Standard 208 to require passive restraints. 49 Fed.Reg. 28,962 (1984) (codified at 49 C.F.R. § 571.208 (1984)) (Final Rule). The Final Rule can be satisfied in several ways, including airbags, enhanced padding of the automobile interior, and [] either detachable or non-detachable automatic belts. During the first few years after the standard takes effect, the Final Rule creates special incentives for installation of passive protection systems other than automatic belts. Specifically, for each car in which an airbag or passive interior system is installed, the manufacturer will be given credit for an extra one-half automobile toward its percentage requirement. *Id.* at 29,000.

The Final Rule requires the phasing-in of passive occupant protection in all passenger cars beginning September 1, 1986. *Id.* at 28,963. But there is another feature of the Final Rule which has drawn the petitioners' attack. The passive restraint requirements embodied in the new standard will be rescinded if by April 1, 1989, two-thirds of the population of the United States is covered by mandatory usage laws (MULs) which meet certain specified conditions. *Id.*⁶ It is this "trap door" provision, as petitioners

⁵ This notice sought comments regarding public acceptance of automatic restraints, usage rates and effectiveness of the various restraint systems, and the benefits to be derived from the various alternatives. The Department also sought comments on the following automobile occupant protection alternatives: requiring automatic restraints with a waiver for States with mandatory safety belt usage laws (MULs); requiring automatic restraints except if three-fourths of the States enact MULs; requiring a demonstration program by automobile manufacturers; and requiring airbags for the driver's side of small cars only. 49 Fed.Reg. 20,460 (1984). This comment period closed on June 13, 1984.

⁶ These conditions are: (1) that the MUL require each out-board (non-center front seat) occupant of a passenger car that that was required by federal regulation, when manufactured, to be equipped with front seat occupant restraints to have those restraints properly fastened about their bodies at all times while

colorfully put it, that provides the focal point of the various challenges before us. To exacerbate matters, as petitioners see it, the Final Rule further provides that the Secretary will consider waiving the minimum requirements for States that had “substantially complying” MULs in place prior to August 1, 1984. *Id.* at 28,999. The automatic occupant protection requirement will be rescinded immediately upon the Secretary’s determination that the requisite two-thirds population level is reached.⁷

II

We first address the ripeness issues raised by the Secretary. After setting forth some general principles to guide our analysis, we then examine each issue raised by petitioners to determine whether it is ripe for review.

A

[1] The ripeness doctrine limits the power of federal courts in adjudicating disputes. Its roots are found in both the Article III requirement of “case or controversy” and prudential considerations favoring the orderly conduct of the administrative and judicial processes. *See Regional Rail Reorganization Act Cases*, 419 U.S. 102, 138, 95 S.Ct. 335, 356, 42 L.Ed.2d 320 (1974); *Eagle-Picher*

the vehicle is in forward motion; (2) a prohibition of waivers from the MUL except for medical reasons; (3) an effective date of not later than September 1, 1989; and (4) an enforcement program that includes (a) a minimum penalty of \$25, with a separate penalty imposed for each person violating the law, (b) a civil litigation penalty providing that the violation of a MUL may be used in mitigating any damages sought by a person injured in an accident, (c) the establishment of a program to encourage compliance with the MUL, and (d) the establishment of a MUL evaluation program by the State to provide information to the Department regarding its MUL. 49 C.F.R. § 571.208.S4.1.5.2 (1984).

⁷ The compliance schedule in the absence of rescission is as follows: ten percent of all automobiles manufactured after September 1, 1986; twenty-five percent after September 1, 1987; forty percent after September 1, 1988; and one hundred percent after September 1, 1989. 49 Fed.Reg. at 28,963.

Industries v. EPA, 759 F.2d 905, 912 (D.C.Cir.1985).⁸ According to the leading Supreme Court case on the subject, *Abbott Laboratories v. Gardner*, 387 U.S. 136, 87 S.Ct. 1507, 18 L.Ed.2d 681 (1967), the ripeness doctrine is designed to protect both Article II and Article III interests. First, it is intended "to prevent the courts, through avoidance of premature adjudication, from entangling themselves in abstract disagreements over administrative policies." 387 U.S. at 148, 87 S.Ct. at 1515. Second, the doctrine is intended "to protect the agencies from judicial interference until an administrative decision has been formalized and its effects felt in a concrete way by the challenging parties." *Id.*

Abbott Laboratories set forth a now familiar two-part test for deciding whether an agency action is ripe for review, focusing on both (1) "the fitness of the issues for judicial decision," and (2) "the hardship to the parties of withholding court consideration." *Id.* at 149, 87 S.Ct. at 1515. Like other legal inquiries, application of this test is by no means an exact science; nor is it to be a matter of weaving "complicated legal distinctions" divorced from reality. See *Midwestern Gas Transmission Co. v. FERC*, 589 F.2d 603, 618 (D.C.Cir.1978); *Continental Air Lines, Inc. v. CAB*, 522 F.2d 107, 128 (D.C.Cir.1974). It requires, rather, the exercise of "practical common sense," faithful to the considerable body of law which guides us. *Id.* at 124.

[2] Under the first prong of the *Abbott Labs* test, the court considers any institutional interests that either the court or the agency may have for postponing review. See *Eagle-Picher*, 759 F.2d at 915. Under this branch of our analysis, we consider such matters as whether the agency's action is final and whether the issue is a purely legal one. See, e.g., *Abbott Laboratories*, 387 U.S. at 149, 87 S.Ct. at 1515; *Continental Air Lines*, 522 F.2d at 126.

⁸ This court has recently stated that "[t]he point at which constitutional constraint fades into persuasive practicalities is difficult to discern and unnecessary to identify." *Action Alliance of Senior Citizens v. Heckler*, 789 F.2d 931, 940 (D.C.Cir.1986). The same result obtains whether the court bases its finding of unripeness on constitutional or prudential considerations.

But even when agency action is final and the issues presented are purely legal, a court may nonetheless properly deem a matter unfit for resolution if postponing review would provide for a more efficient examination and disposition of the issues. See *Toilet Goods Association v. Gardner*, 387 U.S. 158, 163-64, 87 S.Ct. 1520, 1524-25, 18 L.Ed.2d 697 (1967); *Alascom, Inc. v. FCC*, 727 F.2d 1212, 1217 (D.C.Cir.1984); *Midwestern Gas*, 589 F.2d at 620. The court, for example, might determine that "further administrative action is needed to clarify the agency's position," *Action Alliance of Senior Citizens v. Heckler*, 789 F.2d 931, 940 (D.C.Cir.1986), or that the court's deliberations might benefit from letting the question arise "in some more concrete and final form," *Eagle-Picher*, 759 F.2d at 915 (quoting *Continental Air Lines*, 522 F.2d at 125); or that resolution of the dispute is likely to prove unnecessary, *see id.* For all these reasons, courts and agencies have a legitimate interest in avoiding adjudication of speculative controversies.

[3, 4] The second prong of the *Abbott Labs* test requires consideration of the countervailing interests of the challenging parties in obtaining a prompt resolution of their dispute. *See id.* at 915. It is well settled that for an institutional interest in deferral to be outweighed, postponing review must impose a hardship on the complaining party that is immediate, direct, and significant. *See Abbott Laboratories*, 387 U.S. at 152-53, 87 S.Ct. at 1517-18; *Action Alliance*, at 940. Thus, as in *Abbott Labs* itself, an agency enforcement policy may impose the requisite hardship even before the policy is implemented if, for example, it would reasonably prompt a regulated industry, unwilling to risk substantial penalties by defying the policy, to undertake costly compliance measures. *See, e.g., Abbott Laboratories*, 387 U.S. at 152-53, 87 S.Ct. at 1517-18. On the other hand, a party's allegation of hardship will be found wanting if there are too many "ifs" in the asserted causal chain linking the agency's action to the alleged hardship, *see, e.g., Tennessee Gas Pipeline Co. v. FERC*, 736 F.2d 747, 750 (D.C.Cir.1984), or if the asserted hardship is not sufficiently concrete, *see, e.g., Abbott Laboratories*, 387 U.S. at 148, 87 S.Ct. at 1515. "The mere *potential* for future injury," moreover, is not enough. *Alascom*, 727 F.2d at 1217 (emphasis in original).

[5] We recognize that even though “the courts might prefer to resolve a particular question at another time and place, they should have a very good reason for indulging that preference, if in doing so they are refusing a petitioner’s request to be relieved of an onerous legal uncertainty.” *Continental Air Lines*, 522 F.2d at 128. But, if the interests of the court and agency in postponing review outweigh the interests of those seeking relief, settled principles of ripeness squarely call for adjudication to be postponed.

B

With one exception, we conclude that in the case before us the uncertainties occasioned by postponing review are not sufficiently onerous — if indeed they are onerous at all — to overcome the institutional interests in postponement. The exception, as we will explain later, is New York’s challenge to the Secretary’s decision rejecting certain alternatives in her formulation of the passive restraint standard.

1

[6] All of the petitioners contend that, for various reasons, the automatic rescission feature of the Secretary’s rule is arbitrary and capricious.⁹ This issue, we are persuaded, is not ripe for review under the *Abbott Labs* analysis.

To be sure, the Secretary’s Final Rule constitutes final agency action. And, the question whether the rescission provision is arbitrary and capricious requires no further factual development

⁹ Petitioners advance three grounds for this assertion: (1) the Secretary failed adequately to consider the alternative of permitting both MULs and a federal passive restraint standard, *see* State Farm Brief at 33-36; NAIC Brief at 11; New York Brief at 25-27; (2) the Secretary has provided insufficient justification for her view that MULs in States covering two-thirds of the U.S. population would provide safety benefits equal to or greater than a passive restraint standard, *see* State Farm Brief at 36-45; NAIC Brief at 11; New York Brief at 24-25; and (3) that the provision’s waiver rule lacks a rational basis, *see* New York Brief at 27-29.

inasmuch as this question must be resolved on the basis of the administrative record before the Secretary at the time of her decision.¹⁰

Nonetheless, the institutional interest in avoiding speculative controversies is powerfully present here because the evidence before us indicates that the possible rescission about which petitioners are vexed will likely never occur. According to data supplied by one petitioner, State Farm Insurance Co., twenty States, covering sixty percent of the U.S. population, have now passed mandatory usage laws. None of these laws, however, apparently complies with the Secretary's specific requirements. *See* State Farm Supplemental Brief at 7-10, 1a.¹¹ Even if all remaining States were to pass complying MULs (and assuming that New York's pre-Final Rule MUL is counted under the Secretary's waiver provision), some States with MULs now on the books would have to amend their statutes to comply with the Final Rule in order for the two-thirds population requirements to be met.¹²

¹⁰ One of the petitioners also contends that this case is fit for review because "Congress has explicitly indicated that final automotive safety standards . . . be reviewed within 60 days of their promulgation. 15 U.S.C. § 1394(a)(1)." NAIC Brief at 3. The petitioner, however, has misconstrued the statute. That measure does not speak to courts at all; instead it requires anyone who seeks to challenge the Secretary's standard to file a petition for review within 60 days of promulgation.

¹¹ Indeed, petitioners assert that since the Secretary promulgated the Final Rule, the trend in state legislatures is to pass MULs that deliberately fall short of the Secretary's requirements so that the population of those States will not be counted toward the Secretary's numerical requirement. *See* State Farm Supplemental Brief at 9.

¹² Aside from New York, States covering approximately 52 percent of the U.S. population have passed *apparently* noncomplying MULs since the Final Rule was promulgated. New York, which accounts for approximately 8 percent of the population, passed a MUL prior to August 1, 1984. New York's MUL appears to "substantially comply" with the Secretary's requirements, thus it is quite possible that New York's population will be counted towards the two-thirds population requirement under the waiver provision in the Final Rule. Assuming New York's MUL is counted, States covering at least an additional 59 percent of the U.S. population will still have to pass complying MULs between now and 1989.

On the record before us, it appears singularly unlikely that the passive restraint standard will be rescinded by 1989.¹³ Failure to rescind the standard at that time would, of course, render the assault on the provision moot. Since it appears unlikely that the "trap door" will ever be opened, a decision on this issue may very well prove unnecessary.

The institutional interest in postponing review has not been counterbalanced by the requisite showing of hardship. Petitioners allege hardship resulting from (1) deaths that will likely occur if the Secretary's rule is rescinded; (2) the effects of the rescission provision on the technological development of passive restraint systems; and (3) the effect of the provision on the States and, in turn, on the insurance companies' and insurance commissioners' lobbying efforts. We examine each of these in turn.

The first concern is clearly misplaced and need not detain us. The evil feared by petitioners will never eventuate if rescission is never effected. If, on the other hand, the "trap door" appeared imminently ready to open, then petitioners could avail themselves of further judicial proceedings — including seeking a stay — to prevent that event from taking place. See *Tennessee Gas*, 736 F.2d at 751; *Air New Zealand v. CAB*, 726 F.2d 832, 837 (D.C. Cir.1984). There will be ample opportunity to challenge rescission if it appears imminent at any time during the Secretary's three-year window of opportunity (or, as petitioners see it, a window of vulnerability).

Petitioners' second concern is that the rescission provision may be having an immediate, adverse effect on automakers' incentives to develop passive restraint systems. They fear that automakers

¹³ Petitioners also seem concerned that the Secretary might bend the requirements of the Final Rule and count noncomplying MULs, passed after promulgation of the rule and therefore not subject to the waiver provision, toward the two-thirds population requirement as long as they are in substantial compliance with the Secretary's MUL standards. Should the Secretary take such action, she would, of course, be changing the rules in the middle of the game. She has not yet indicated any intention of doing so. If she were to alter the rules in the manner feared by petitioners, however, review on that ground as well would, of course, be available at that time.

will delay development of such systems, with the result that the passive restraints which are eventually installed will be inferior and undertested. This, presumably, would affect the insurance companies' ultimate liabilities and, hence, their rates.

But this argument does not withstand analysis. First, it fails to take adequately into account the practical reality that the automobile industry must begin manufacturing cars with passive restraints in September of this year.¹⁴ *See supra* note 7. Second, and more fundamentally, the challenge is rife with speculation about what *may* occur in the automobile industry. Lacking any evidence to support their view, petitioners would have us gaze into a crystal ball to determine what Detroit may or may not do. On such musings judicial review cannot properly be grounded.¹⁵

¹⁴ Moreover, it is questionable whether the short-run incentives for development of non-belt passive restraints created by the Secretary's rule (giving extra credit for non-belt restraint systems installed during the phase-in period), *see* 49 Fed. Reg. at 29,000, will be seriously diluted by the risk that the standard will be rescinded sometime before the end of the phase-in period. As already noted, it now seems most unlikely that the Secretary will have occasion to invoke the rescission provision at all; in addition, the federal requirement of passive restraints goes into effect for ten percent of the fleet coming off the assembly line in the next few months. Rescission is plainly not imminent; what is imminent is the installation, pursuant to federal mandate, of passive restraints.

¹⁵ Petitioners' position seems in this respect similar to the alleged hardship which we rejected as a basis for ripeness in *Midwestern Gas*. There, importers of Canadian natural gas challenged an agency's conditional authorization allowing *other* importers to import Canadian gas through part of the Alaska pipeline. The importers alleged that, *if* Canadian reserves dwindled, Canada *might* perceive the U.S. agency's action as a signal that this Nation "favored" the Alaska pipeline; in consequence, the theory went, the Canadian energy authorities might choose to grant import authorizations to "favored" importers whose purchases came through that pipeline. This claim was deemed insufficient to merit adjudication at that time largely because the asserted injury was grounded on speculation about future events and future behavior of third parties. *See* 589 F.2d at 622-23. So too here.

The third, and, according to petitioners, most serious hardship spawned by postponing review is to “weaken state efforts to enact tough MULs.” State Farm Reply Brief at 9; NAIC Reply Brief at 5-6. Petitioners reason that state legislatures are forced by the Final Rule to choose between a federal passive restraint standard and strong MULs.

The threshold and, in our view, fatal difficulty with this argument is that the petitioners seek to assert the hardships of States that are not before the court. *Abbott Laboratories* requires that we look at the “hardship to *the parties*.” 387 U.S. at 149, 87 S.Ct. at 1515. New York is the only State to have petitioned for review of the Secretary’s Final Rule, and New York had already passed an MUL before the Final Rule was promulgated. By virtue of its pre-MUL being firmly in place, New York is left to contend only that “if New York soon determines that its MUL needs to be strengthened, the State *will* face a serious dilemma.” New York Reply Brief at 6 (emphasis added).¹⁶ This is, again, a speculative scenario, not an indication of immediate or concrete hardship of the kind demanded under the cases.¹⁷

¹⁶ Petitioners allege that, in formulating its mandatory seatbelt legislation, the State of New Jersey consciously decided to employ a \$20 fine for non-compliance, rather than a higher fine, in order to avoid having its law count toward the Secretary’s requirement. New Jersey, however, is not a party to this litigation.

¹⁷ But even were we to overlook this threshold hurdle and allow the insurance companies and commissioners to assert the interests of the States, we would still discern no hardship of sufficient concreteness. The dilemma of the non-present States as perceived by petitioners seems to us illusory. States can seemingly avoid having their MULs “count” toward rescission of the federal standard by the expedient of including in their MULs a provision that automatically nullifies the measure as soon as it is counted toward the Secretary’s two-thirds requirement. Indeed, a number of States have incorporated precisely such provisions in their MULs. See State Farm Reply Brief at 7-10 app. We of course assume the obvious, namely that States would prefer not to insert a provision that poses a risk, however remote, that a much desired state law might be rescinded. But the perceived necessity of including such a provision does not seem to us a sufficiently immediate or onerous hardship, especially

(footnote continued)

Petitioners also assert that the rescission provision produces hardship for States *not* contemplating MULs. According to petitioners, such States — already in want of a MUL — could suffer the further deprivation of a protective federal passive restraint standard *if* as few as sixteen other States pass qualifying MULs.

(footnote continued)

when it now appears that a rescission is unlikely. And, if rescission does appear imminent, the courthouse doors are open for a renewed challenge to the “trap door” provision.

Even putting to one side the availability of an automatic “sunset” provision, the States’ asserted dilemma would still be quite unlike that faced by the pharmaceutical companies in *Abbott Laboratories*. There, as we previously alluded to, the pharmaceutical companies were, for all practical purposes, coerced into a particular course of conduct—changing their labels and advertisements—by the prospect of civil and criminal penalties that might be visited upon them. See 387 U.S. at 152-53, 87 S.Ct. at 1517-18. Primary conduct was clearly being affected. Here, by contrast, the States fear that unless they take a particular course of action—passing MULs that are less stringent than they would otherwise prefer—the agency will withdraw federal regulation which the States believe to be of benefit. That is not the concrete effect on primary conduct that ripeness doctrine demands. The remote *possibility* that such a benefit will be withdrawn is, in our view, a considerably less substantial sort of “hardship” than the possibility that civil and criminal penalties will be imposed.

The hardship to the States asserted by petitioners also seems much less onerous than that asserted in *Pacific Gas and Elec. Co. v. State Energy Resources Conservation and Dev. Comm’n*, 461 U.S. 190, 103 S.Ct. 1713, 75 L.Ed.2d 752 (1983), relied upon by NAIC. There, electric utilities contemplating construction of nuclear plants challenged as preempted by federal law a California statute imposing a moratorium on nuclear plant construction until the State determined that adequate facilities had been developed nationally for the permanent disposal of nuclear wastes. The utilities asserted that, in light of the long lead time required before constructing a nuclear facility, they needed a judicial decision immediately; otherwise, they would be forced either to abandon all nuclear energy development or run the risk that planning and development expenses would be incurred for naught. See *id.* at 201-02, 103 S.Ct. at 1720-21. In either case, the utilities would suffer serious losses. In view of those circumstances, the Court concluded, “[t]o require the industry to proceed without knowing whether the moratorium is valid would impose a palpable and considerable hardship on the utilities, and may ultimately work harm on the citizens of California.” *Id.* Here, by contrast, none of the petitioners alleges that the rescission provision of the Final Rule has any immediate financial effects on them.

See NAIC Reply Brief at 5-6. The State of New Mexico, one of the amici here, also raises this argument. See *Amicus Curiae* Brief of New Mexico at 3. As we have already established, however, this asserted hardship is not cognizable because it is not being asserted by any of the parties before the court. Assuming *arguendo* that this argument could properly be advanced by petitioners (or an amicus), this alleged hardship is still illusory. The state of affairs petitioners fear will come about, again, only if the Secretary in fact rescinds the passive restraint standard. As we have by now recounted a bit tediously, judicial review will be available should that time in fact appear to be at hand. It is not at hand, and perhaps will never arrive. Postponing review until that contingency materializes will impose no hardship on those States.

The direct hardship asserted by the insurance companies and commissioners is likewise inadequate. The principal effect of the rescission provision on them, as they see it, is to hamper them in their lobbying efforts to secure enactment of stringent MULs in the several States by virtue of the risk that success on that front would insidiously undermine the federal passive restraint standard. See, e.g., NAIC Reply Brief at 6. These petitioners, in a word, want both federal passive restraint requirements and tough MULs. They emphatically do not want to trade off one for the other. But uncertainty in lobbying strategy scarcely rises to the level of concrete hardship. It seems similar, upon analysis, to the "planning uncertainty" which our prior cases have rejected as insufficient. See, e.g., *Tennessee Gas*, 736 F.2d at 749-50 (rejecting as insufficient the assertion that the agency's interpretation affected current business planning); *Diamond Shamrock Corp. v. Costle*, 580 F.2d 670, 673 (D.C.Cir.1978) (rejecting as insufficient the contention by dischargers that EPA's new effluent permit regulations placed them in "acute dilemma" that affected their business planning, even before seeking permits under the new regulations). And, in view of the unlikelihood that rescission will ever occur, petitioners' uncertainty seems minimal at best.¹⁸

¹⁸ In addition, the availability of an alternative state statute that would be rescinded if "counted" for federal rescission purposes detracts significantly from
(footnote continued)

[7] The second broad issue raised by petitioners is whether the Secretary's automatic rescission is contrary to the Safety Act. Specifically, petitioners contend that (1) by abandoning the passive restraint standard in favor of MULs passed by some — but not all — of the States, the Secretary violates her statutory duty to ensure that safety standards be uniform; (2) by abandoning the standard in favor of State MULs, the Secretary violates her statutory duty to put in place *federal* standards; and (3) the automatic rescission provision is unlawful because the statute does not confer upon the Secretary authority to seek to influence safety legislation in the States. We find these contentions, upon analysis, similarly unripe.

The first two contentions depend, of course, upon rescission of the Final Rule; unless rescission comes, the evils identified by petitioners in these two respects will never come to pass. The harm allegedly flowing from the replacement of a uniform federal standard by a patchwork of state legislation will occur only when (if ever) the uniform federal standard is rescinded. No one contends, nor could they reasonably, that the substantive (i.e., nonrescission) provisions of the Final Rule are in any wise non-uniform. Since the Secretary's substantive standards are at present national in scope and uniform in nature (and since, as already discussed, the rescission provision will likely never take effect), a substantial likelihood exists that resolution of these two issues will prove unnecessary. For the same reasons that petitioners' "arbitrary and capricious" attack on the rescission provision is unripe, these two arguments must likewise be deemed ripe.

[8] The third statutory challenge, advanced only by New York, is also unripe, but requires a somewhat different analysis. New York claims, in essence, that the Secretary is attempting through the rescission provision to exert a here-and-now influence on state legislation. This, New York contends, the Secretary has no statutory power to do. New York further maintains that the court has no interest in waiting to see whether

the force of any effects on the insurance industry's (and insurance regulators') lobbying activities in the various state capitals.

the Secretary's contemplated action ever takes place, for the relevant action has already occurred and indeed continues to occur. This issue is therefore, New York argues, more "fit" for resolution than the issues which we have already discussed.

We are unpersuaded that this issue is ripe. Although we agree that the Secretary's alleged violation (as New York sees it) of the Safety Act has already occurred, this issue is still unfit for review because it has not yet arisen in a sufficiently concrete setting. As we have seen, New York, the only party raising this issue, has not alleged the existence of any proposed or pending legislation in that State on which the Secretary's asserted violation is having any purported effect. As to New York itself, then, the Secretary's alleged "coercion" of the States is obviously speculation upon speculation. Moreover, neither New Mexico (which, as we noted before, filed an *amicus* brief) nor any other State is before us contending that its legislative process is presently being affected by the Secretary's alleged coercion. Although the issue New York raises appears to be a legal one, it would be helpful to the court to see how this alleged coercion actually operates in practice. See, e.g., *Toilet Goods Association*, 387 U.S. at 164, 87 S.Ct. at 1524 (although issues raised are legal, judicial appraisal of FDA regulations would "stand on a much surer footing in the context of a specific application"). In addition, postponing review until such a situation allegedly arises would help "assure that concrete adverseness which sharpens the presentation of issues." *Baker v. Carr*, 369 U.S. 186, 204, 82 S.Ct. 691, 703, 7 L.Ed.2d 663 (1962) (discussing rationale for standing requirement in setting of constitutional adjudication).¹⁹ Turning to the second prong of the *Abbott Labs* test, neither New York nor any other State alleges, as we have seen, any direct, present hardship arising from the Secretary's alleged violation of the Safety Act in this respect. Under these

¹⁹ In so holding, we do not pass upon the underlying question whether an alleged effect upon an ongoing legislative process is sufficiently concrete in nature to satisfy the considerations that ripeness doctrine sets before us. The judicial manageability of such an inquiry is not immediately evident to us, but we need not and do not opine one way or the other on the subject.

circumstances, the alleged hardship created by postponing review of this issue is insufficient to outweigh the institutional interest in postponement.

In sum, we find that all the issues raised by petitioners' attacks on the Secretary's rescission provision are not yet ripe for review. That provision has not been implemented. It may well never be implemented. The hardships alleged by petitioners are either not their own or rest upon multiple layers of speculation. Were we to entertain these contentions, "we would venture away from the domain of judicial review into a realm more accurately described as judicial preview." *Tennessee Gas*, 736 F.2d at 751. We have not been commissioned with a "roving preview function," *see id.*, and we decline the invitation to assume that role ourselves.²⁰

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[9] Of the parties before us, only the State of New York challenges the Secretary's decision not to require either airbags or non-detachable automatic belts as the sole mechanisms for satisfying the passive restraint requirement. New York contends that this decision is "arbitrary and capricious" under the Administrative Procedure Act, 5 U.S.C. § 706(2)(A)(1982). The issue is ripe for review, for reasons we shall now describe.

First, the issue fully satisfies the fitness prong of the *Abbott Labs* inquiry since neither the court nor the agency has anything to gain by postponing review. The agency's decision is final. Resolution of the issue requires no more factual development than that already contained in the administrative record. No further administrative action is needed to clarify the agency's

²⁰ Our decision does not create a "catch 22" for litigants seeking review of agency action under a statutory provision that requires them to petition the court within a short period after the agency's action becomes final. As we have previously stated, "it is the duty of the court to make the prudential judgment whether a challenge to agency action is ripe; it is the responsibility of petitioners to file for review within the period set by Congress." *Eagle-Picher*, 759 F.2d at 912.

position. Indeed, it appears that the Department intends to take no further action on this issue; in consequence, no future agency action or proceeding looms on the horizon that would permit us to test the effect of the agency's decision in a more concrete setting.

Moving to *Abbott Labs'* second prong, New York has alleged substantial hardships resulting from postponing review. The phasing in of passive occupant protection mandated by the Secretary's rule is to begin straight away, effective September 1, 1986. If New York is correct in asserting that the Final Rule is more lenient (and therefore less promotive of automobile safety) than is justified by the record, then many people, including New York citizens, may be adversely affected in the most direct way by the Secretary's failure to require greater protection. In the absence of countervailing institutional interests, we are satisfied that New York has alleged in this respect a sufficient hardship so as to make its contention ripe for review.²¹

III

We turn then to the merits of the one ripe issue — New York's challenge to the Secretary's failure to implement certain

²¹ The dissent argues that a portion of the New York challenge found unripe by the court is in fact ripe, namely that "the Secretary arbitrarily failed to consider the alternative of permitting both mandatory usage laws (MULs) and a federal passive restraint standard." Dissent at 490. But this contention is, upon analysis, simply one part of the broader attack on the "trapdoor" provision itself as being arbitrary and capricious. The Secretary's "permitting" state-adopted MULs (plus requiring passive restraints) is just another way of describing the elimination of the Secretary's "trapdoor." A careful scrutiny of the various petitioners' claims in this respect confirms our reading. See, e.g., State Farm Brief at 29-36. This should come as no surprise, since the situation of the Secretary's "permitting" both mandatory usage laws and imposing a federal passive restraint standard is in fact the situation that now obtains. State MULs (and the passive restraint requirement) will be "permitted" until such time, if ever, that the requisite population coverage is met, a condition which we have already determined to be unlikely to occur. It is the contingent (and indeed remote) nature of this desired state of affairs coming to an end that renders this contention unripe for review.

alternatives suggested during the courts of the rulemaking. In order to prevail, New York bears the burden of establishing that the agency's action was "arbitrary or capricious." See, e.g., *National Association of Regulatory Utility Commissioners v. FCC*, 746 F.2d 1492, 1502 (D.C.Cir.1984).²³ It hardly bears repeating that this is a narrow standard of review, one which forbids us from substituting our judgment for that of the agency. *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 416, 91 S.Ct. 814, 823, 28 L.Ed.2d 136 (1971). We must, of course, engage in a "searching and careful" review of the agency's reasoning, see *id.*, and avoid becoming a "rubberstamp" for the agency, see *Bureau of Alcohol, Tobacco and Firearms v. FLRA*, 464 U.S. 89, 97, 104 S.Ct. 439, 444, 78 L.Ed.2d 195 (1983) (quoting *NLRB v. Brown*, 380 U.S. 278, 291-92, 85 S.Ct. 980, 988-89, 13 L.Ed.2d 839 (1965)), or letting deference to the agency's judgments slip into "judicial inertia," see *id.* (quoting *American Shipbuilding Co. v. NLRB*, 380 U.S. 300, 318, 85 S.Ct. 955, 967, 13 L.Ed.2d 855 (1965)). But we may nonetheless overturn agency action only where a "clear error of judgment" has occurred. *Bowman Transportation, Inc. v. Arkansas-Best Freight System, Inc.*, 419 U.S. 281, 285, 95 S.Ct. 438, 441, 42 L.Ed.2d 447 (1974); *Overton Park*, 401 U.S. at 416, 91 S.Ct. at 823. The agency must be upheld as long as it has articulated a satisfactory explanation for its action, including a "'rational connection between the facts found and the choice made.'" *State Farm*, 463 U.S. at 43, 103 S.Ct. at 2866 (1983) (quoting *Burlington Truck Lines, Inc. v. United States*, 371 U.S. 156, 168, 83 S.Ct. 239, 246, 9 L.Ed.2d 207 (1962)).

²³ The standard of review in this case is determined by the Safety Act. Section 103(b) of the Act, 15 U.S.C. § 1392(b) (1982), provides that "all orders establishing, amending, or revoking a Federal motor vehicle safety standard" shall be promulgated under the informal rulemaking procedures of the Administrative Procedure Act, 5 U.S.C. § 1392(b) (1982). The APA, in turn, provides that, *insofar as the present bases of attack are concerned*, the agency's action may be set aside by a reviewing court only if found to be "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." *Id.* § 706(2)(A).

As is by now common ground in such cases, the agency may be overturned if, for example, it “has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.” *Id.* Although we may not make up for deficiencies in the agency’s analysis, see *SEC v. Chenery Corp.*, 332 U.S. 194, 196, 67 S.Ct. 1575, 1577, 91 L.Ed. 1995 (1947), we will “uphold a decision of less than ideal clarity if the agency’s path may reasonably be discerned[.]” *Bowman Transportation*, 419 U.S. at 286, 95 S.Ct. at 442.

New York contends that the passive restraint standard contained in the Final Rule fails the “arbitrary and capricious” test in three respects. First, New York asserts that the Department should have excluded the option of meeting the passive restraint requirement with detachable automatic belts, see New York Brief at 29-32;²³ second, it maintains that the Secretary should have required airbags in all cars, see *id.* at 33-36; and finally,

²³ New York also contends that the Secretary’s failure to eliminate detachable seatbelts as an acceptable automatic restraint violates the Safety Act. The argument appears to be as follows: The Act directs the Secretary to establish motor vehicle standards that “shall meet the need for motor vehicle safety.” 15 U.S.C. §§ 1391(2), 1392(a). “Motor vehicle safety,” moreover, is defined as protection against “unreasonable risk.” *Id.* § 1391(1). Because the usage rate with non-detachable belts is higher than that for detachable automatic belts, DOT is required to eliminate the detachable belt option; to do otherwise would permit “unreasonable” risk. See New York Brief at 22-23. Even assuming the accuracy of New York’s assertion about the effectiveness of non-detachable belts, we cannot agree with the argument. The Safety Act does not require the Secretary to adopt the technological alternative providing the greatest degree of safety. The Act expressly permits the Secretary to consider such factors as reasonableness and practicality in addition to safety features. See 15 U.S.C. § 1392(f)(3). Both the Supreme Court and this court, moreover, have recognized the Secretary’s authority to consider such factors as cost and public acceptance. See *State Farm*, 463 U.S. at 54, 103 S.Ct. at 2872; *Pacific Legal Foundation*, 593 F.2d at 1345.

it contends that the Secretary failed altogether to consider the option of requiring both airbags and non-detachable belts, *see id.* at 32.

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[10] The Secretary fully considered the suggestion that, as among automatic belts, only non-detachable rather than detachable belts be deemed to meet the federal standard. Her refusal to embrace the idea was based primarily upon two factors. First, since a non-detachable belt is, according to the Secretary, "the most coercive type of automatic restraint," 49 Fed.Reg. at 28,993, imposing that particular requirement would create a "serious adverse public reaction," *id.* at 29,002. New York contends that this conclusion "is admitted to be pure speculation and belied by surveys of consumer attitudes in the record." New York Brief at 30. New York fails, however, to support this contention with any citations to the record or to otherwise buttress its position. *See id.* The Secretary, by contrast, cites surveys finding that 10 to 20 percent of the public would be likely to cut non-detachable belts, thereby defeating the system. *See* 49 Fed.Reg. at 28,993. This sort of consideration is entirely appropriate to weigh in the balance; as we have previously held in the very context of passive restraint standards, the Department "cannot fulfill its statutory responsibility unless it considers popular reaction." *Pacific Legal Foundation*, 593 F.2d at 1345.

The second basis of the Secretary's refusal to eliminate detachable automatic belts from the passive restraint requirement was her judgment that non-detachable belts would effectively force manufacturers to eliminate the center front seat. *See* 49 Fed.Reg. at 28,993. According to the Secretary, even if the center seat were exempt from the automatic belt requirement, occupants of that seat would have difficulty getting past non-detachable belts to situate themselves at their front seat destination. *See id.* Although New York argues that this conclusion is not necessarily correct (since the Secretary could either require motorized automatic belts which come into place only when the doors are closed, or, alternatively, could make an

exception for cars with center seats), we cannot say that the Secretary's conclusion in this respect constitutes a "clear error of judgment," *see Bowman Transportation*, 419 U.S. at 285, 95 S.Ct. at 442, or is otherwise arbitrary and capricious.²⁴

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[11] New York next attacks the Secretary's failure to mandate airbags in all cars. Consistent with the Supreme Court's admonition that she is obliged to consider this option, *see State Farm*, 463 U.S. at 46, 103 S.Ct. at 2868, the Secretary analyzed this possibility in considerable detail. *See* 49 Fed.Reg. at 28,990-92, 29,000-02.

Her ultimate decision not to require airbags, but to provide incentives for their employment, was based on two factors.²⁵ First, despite their admitted safety benefits, airbags are costly: According to Department estimates, they would cost \$320 more per car than manual belts; in addition, their replacement cost is an estimated \$800, making it likely that many airbags would not be replaced once used. *See* 49 Fed.Reg. at 29,001.²⁶ These

²⁴ We also note that an earlier passive restraint standard permitting compliance by means of a detachable belt was upheld by this court in *Pacific Legal Foundation*.

²⁵ The dissent suggests that the States do not need to be encouraged to pass MULs. Dissent at 495. That view, however, is not buttressed by any facts. Indeed, it would appear that the passage of MULs has in fact come about in *response* to the Secretary's rule. Supp. Brief for Respondent at 5.

²⁶ The dissent argues that since airbags are rarely "inadvertently deployed," consumers will gladly pay to "replace the devices that saved the car's occupants from death or serious injury." Dissent at 496. The dissent's analysis leaves no room for the category of airbags that are deployed by virtue of sudden deceleration, without a crash, or those deployed in a minor accident for which seat belts would have sufficed. While those saved from serious injury by virtue of deployed bags may be willing to incur the replacement cost, drivers not fitting into that category may resist paying \$800 to replace inadvertently deployed bags.

More broadly, it should not go unnoticed that the dissent goes farther in its attack on the Secretary's rule than the insurance industry itself. Unlike the dissent, State Farm does not contend that the Secretary's substantive rule on passive restraints is unduly lenient.

cost factors were appropriately taken into account. The Supreme Court observed in *State Farm* that “[t]he agency is correct to look at the costs as well as the benefits of Standard 208.” 463 U.S. at 54, 103 S.Ct. at 2872. Cf., e.g., *American Textile Manufacturers Institute, Inc. v. Donovan*, 452 U.S. 490, 509, 101 S.Ct. 2478, 2490, 69 L.Ed.2d 185 (1981) (overturning OSHA’s cotton dust regulations, in part because OSHA had employed cost-benefit analysis in the face of statutory language mandating feasibility analysis). In light of these cost estimates, the Secretary concluded that the safety benefits of airbags would not be worth their high cost.²⁷

New York vehemently challenges the agency’s cost-benefit analysis in this arena of human safety. Specifically, New York complains that the standard takes into account neither the factor of pain and suffering nor the value of human life itself. See New York Brief at 33. Not so. The Final Rule devoted several pages to a discussion of the relative effectiveness of airbags, seatbelts, and passive restraints in reducing fatalities and serious injuries. See 49 Fed.Reg. at 28,984-87; 29,001.

In a related vein, New York takes the Secretary to task for relying upon the Department’s own cost estimates rather than lower estimates found in the record. Again, we cannot say that the Secretary’s cost estimates are arbitrary, particularly in light of other cost estimates submitted by the automobile manufacturers that run much higher than the Secretary’s. In our view, such details of cost-benefit analysis are “most appropriately entrusted to the expertise of an agency,” especially where, as here, the evidence runs in contrary directions. See *Office of Communication of United Church of Christ v. FCC*, 707 F.2d 1413, 1440 (D.C. Cir.1983).

²⁷ The dissent argues that the Secretary improperly focused on costs, not safety. Dissent at 496. However, as the dissent concedes, the Secretary concluded that the replacement cost of airbags would likely deter consumers from replacing them. If the airbags are not replaced, the Secretary feared, then the occupants of those cars would be left unprotected. Dissent at 495. In our view, the crux of the Secretary’s concern in this respect was safety, not cost *per se*.

The second basis for the Secretary's decision was public acceptability. As a threshold matter, the Secretary recognized that public acceptability would depend to a great extent on the cost of airbags to consumers, concluding that "only a small percentage appears willing to pay more than \$400" for the devices. 49 Fed.Reg. at 28, 988. She also took cognizance of public fears about chemicals used to deploy airbags, the possibility of inadvertent deployment of the devices, and the sense of insecurity harbored by some people at not having a belt wrapped around them. The Secretary reasoned that even though these fears are largely unfounded they must nonetheless be taken seriously. She opined that "[i]t may be easier to overcome these concerns if airbags are not the only way of complying with an automatic occupant protection requirement." 49 Fed.Reg. at 29,001. In short, the Secretary determined that these concerns could best be addressed through real-world experience in the marketplace rather than by regulatory fiat. New York's only response to this point is a single survey indicating that airbags enjoy a higher level of public acceptability than either automatic or manual belts. Particularly in light of a contrary public opinion survey and numerous public comments going in a contrary direction, *see* 49 Fed.Reg. at 28,988, we cannot say that the Secretary's refusal to give determinative weight to the survey championed by New York descended to the depths of arbitrary and capricious action.

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New York's final attack on the Final Rule is that the Secretary failed to consider the alternative of requiring *both* airbags and non-detachable automatic belts. An agency, of course, is obliged to consider all practical, technologically feasible options. *See State Farm*, 463 U.S. at 48, 103 S.Ct. at 2869. The Government contends, however, that the Secretary did in fact consider this alternative and advanced adequate reasons for rejecting it.

We agree. Although the Final Rule is scarcely a model of clarity on this specific point, the Secretary's path may nonetheless reasonably be discerned. *See Bowman Transportation*, 419 U.S.

at 286, 95 S.Ct. at 442. One of the subsections in the Secretary's discussion of her reasons for not adopting other alternatives was entitled "Airbags and/or Non-Detachable Seatbelts." That section discussed the weaknesses of non-detachable belts. *See* 49 Fed.Reg. at 29,002. It seems clear to us that this discussion was intended to respond *both* to the argument that detachable belts should be eliminated as a means of satisfying the passive restraint requirement *and* to the argument that non-detachable belts should be required in tandem with airbags. First, the perceived individual weaknesses of airbags and non-detachable belts are, standing alone, obviously germane to the desirability of requiring the combination of the two. Second, the Secretary expressly invoked her earlier discussion of various alternatives, including an outright requirement of airbags. There was obviously no need to repeat all the points on which she had already elaborated at considerable length.²⁸ Third, had the Secretary intended in this section to address only the option of requiring airbags *or* non-detachable seat belts, one would think she would have chosen to entitle this subsection differently than she did.

As to the substance of the decision not to require both devices, we cannot discern any significant defects in the Secretary's reasoning. Having concluded that non-detachable automatic belts posed public-acceptability concerns sufficient to preclude requiring manufacturers to install them (rather than detachable belts), the Secretary could reasonably decide not to require that non-detachable belts be used in tandem with airbags. While not articulated with crystalline clarity, the Secretary's discussion of this issue passes muster under the "arbitrary and capricious" standard.

²⁸ The dissent contends that the individual weaknesses of airbags and non-detachable belts might be alleviated by requiring both. Dissent at 497. While a dual requirement might maximize protection, it would obviously do nothing to relieve the Secretary's concerns about the primary drawbacks of the devices, namely cost and public acceptability.

IV

For the foregoing reasons, the petition of the State of New York is denied insofar as it challenges the Secretary's decision not to require airbags or non-detachable seat belts. All of the other petitions, together with the remainder of New York's petition, are dismissed as unripe.

So Ordered.

MIKVA, Circuit Judge, concurring in part and dissenting in part:

I agree with my colleagues that most of the challenges to the Secretary's authority are not ripe for the review being sought. While I am troubled by the seeming absence of any statutory authority for the Secretary's stick and carrot dealings with the states, the time to confront that question frontally is not now and may never be, as far as most of the petitioners are concerned. I am not as sanguine about the New York challenges to the Secretary's actions. My colleagues agree that most of the New York complaints are timely and properly before this court. In my view, however, they have erroneously declared one claim untimely. Moreover, I believe that all the complaints are meritorious as well.

New York attacks the Secretary's Final Rule on four grounds. The majority addresses the merits of only three, upholding the agency's action as to each. Based on a misperception of the thrust of the fourth claim, the majority rules it not ripe for review. I find the agency's action in each of the four instances is ripe and fails to withstand judicial scrutiny under the arbitrary and capricious standard of review. Unlike the majority, I believe that the agency has failed to make the requisite rational connection between the facts in evidence and its judgment relating to New York's claims sufficient to pass muster under the arbitrary-and-capricious standard. Therefore, I respectfully dissent.

There is no disagreement about the standard or the evidentiary dimensions of our review. The Secretary's modification of the safety standards may be set aside if "found to be 'arbitrary,

capricious, an abuse of discretion, or otherwise not in accordance with law.' " See *Motor Vehicle Manufacturers Association of the United States, Inc. v. State Farm Mutual Automobile Insurance Co.*, 463 U.S. 29, 41, 103 S.Ct. 2856, 2865, 77 L.Ed.2d 443 (1983) (citing 5 U.S.C. § 706(2)(A)). An agency rule will be deemed arbitrary and capricious if "the agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, or offered an explanation for its decision that runs counter to the evidence before the agency." *Id.* at 43, 103 S.Ct. at 2867. It is well settled that in examining the agency's actions under the arbitrary-and-capricious standard, we must confine our "searching and careful" review, see *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 416, 91 S.Ct. 814, 824, 28 L.Ed.2d 136 (1971), to the evidence in the record. The agency record must reflect an adequate and reasonable basis for the decision, including consideration of all relevant factors. *State Farm*, 463 U.S. at 43, 103 S.Ct. at 2866; *ILGWU v. Donovan*, 722 F.2d 795, 822 (D.C. Cir. 1983), *cert. denied sub nom. Breen v. ILGWU*, 469 U.S. 820, 105 S.Ct. 93, 83 L.Ed.2d 39 (1984). The reviewing court must judge the reasons and justifications the agency presents for its action and not supply a reasoned basis where the agency itself has provided none. *SEC v. Chenery Corp.*, 332 U.S. 194, 196, 67 S.Ct. 1575, 1577, 91 L.Ed. 1995 (1947). "[I]t is the agency's responsibility, not this [c]ourt's, to explain its decision." *State Farm*, 463 U.S. at 57, 103 S.Ct. at 2874.

I

A

New York contends that the Secretary arbitrarily failed to adequately consider the alternative of permitting both mandatory usage laws (MULs) and a federal passive restraint standard. Maj. Op. at 480 n. 9 (citing New York Brief at 25-27). The majority incorrectly subsumes this claim into petitioners' challenge to the automatic rescission feature of the Secretary's Rule. Maj. Op. at 480 & n. 9. In so doing, the majority concludes that the claim is "not ripe for review." Maj. Op. at 480. Were I to agree that New

York's claim is nothing more than an attack on the reasonableness of the "trapdoor" provision, I would concur in my colleagues' determination that the court must decline review of this issue, just as they have done when the other petitioners made this assertion. However, I believe the challenge is part of New York's contention that "the Final Rule is more lenient (and therefore less promotive of automobile safety) than is justified by the record." *See Maj. Op.* at 485.

New York is not questioning the safety effectiveness of MULs per se — an issue which need not be reached unless and until the trapdoor opens. Rather, it is challenging the Secretary's design of a passive restraint requirement upon consideration of only an either/or alternative, without also examining a combination approach. New York argues that the evidence in the record suggests that the combination of MULs plus passive restraints would provide greater safety benefits than the MUL-or-passive restraint option. That the Secretary effectuated her design through the automatic rescission provision does not change the import of the claim. Nor, in my estimation, does it affect the claim's timeliness. If the argument proves true, "then many people, including New York citizens, may be adversely affected in the most direct way by the Secretary's failure to require greater protection." *See Maj. Op.* at 485. Thus, even under the majority's reasoning, this issue is ripe for review. *See id.* Furthermore, upon examination of the record, I conclude that the agency's decision to reject this alternative is devoid of any meaningful support.

B

During the most recent round of rulemaking, numerous commentators argued that passive restraints should be viewed in conjunction with and not as an alternative to state laws requiring seatbelt use. *See* 49 Fed.Reg. 28,999 (1984). These comments were given passing address. In the fifty-page record, the Secretary responded with a one sentence indirect retort:

This argument ignores both the public acceptability concerns set forth above and the incentive for passage

of such laws — to the extent there is significant consumer resistance to automatic protection devices — created by the department's approach.

Id. Examination of this option is nil. Instead, the Secretary steadfastly maintained that *either* automatic occupant protection *or* MULs covering two-thirds of the population would meet the "standards of the Act" and "carry out the objective and purpose of the statute," so long as the MULs met the Department's criteria. *Id.* Playing these alternatives against one another rather than in tandem led the Secretary to adopt the MUL rescission provision. She based her action on the Department's conclusion that "coverage of a large percentage of the American people by seatbelt laws that are enforced would largely negate the incremental increase in safety to be expected from an automatic protection requirement." *Id.* at 28,997. There are two problems with this conclusion.

First, it is completely unsupported, if not contradicted, by the relevant data. Nowhere in the record does the Department explain how it concluded that the incremental safety benefits of passive restraints, as compared to MULs alone, would not be worth the cost. To the contrary, the Department's regulatory impact analysis strongly suggests that passive restraints could well be cost-beneficial even if states passed MULs; it concedes that the combination could maximize both short-term and long-term safety benefits. *See* 1984 Final Regulatory Impact Analysis at VI-29 to -30 (J.A. 250-52); *see also* 49 Fed.Reg. at 28,991 (noting the advantages of passive restraints combined with seatbelt use). It stands to reason that only a combination of the two methods would ensure that the safety benefits are afforded the citizens and travellers in those states that did not enact MULs. Thus, contrary to the Department's conclusion, the evidence indicates that safety would be enhanced by permitting the two regulatory schemes to coexist.

Second, the Department's finding does not support the automatic rescission of the passive restraint requirement upon passage of MULs covering two-thirds of the states. Indeed, it cannot be supported in advance of any opportunity to assess the

actual effect of state MULs in operation. The Department noted, "in order for it to accept MULs as *an alternative* to requiring automatic crash protection, MULs must provide a level of safety equivalent to that which would be expected to be provided . . . by the automatic system." 49 Fed. Reg. at 28,999 (emphasis added). The Department's conclusion that MULs can be as effective as passive restraints standing alone, although supported by an extraordinarily thin record, must be respected. But this again formulates the inquiry only in terms of an either/or approach. Particularly given the fact that at the time of reporting only one American state had ever required seatbelt usage, it seems surpassingly capricious for the Department to decide that MULs covering only two-thirds of the population would render passive restraints superfluous. If MULs actually prove to be workable and so safety-effective that passive restraints are unnecessary, the Department can always rescind the passive restraint requirement at some later date — when there is hard evidence to prove what is now a most doubtful prediction.

In its second justification for dismissing a passive restraint-plus-MUL option, the Department noted tersely that the passive restraint-or-MUL approach both addresses the "significant consumer resistance" to automatic protective devices and offers states an "incentive" to pass MULs. The Secretary apparently believed that promulgating a passive restraint along with promotion of state MULs would both meet with intense public resistance to passive restraints and prevent her from effectively encouraging MUL enactment. Hence, neither element of the scheme would be accomplished. The Secretary's reasoning is far from comprehensible. To the extent it can be pieced together, it lacks record support.

In defending her treatment of the two safety protection methods as alternatives rather than as complements, the Secretary emphasized her belief in the importance of providing some local option in the decision-making. The "option" open to states is to express their preference for MULs over automatic occupant protection by passing such laws. The Department "believe[d] that offering this 'option' should lessen any public

resistance to an automatic occupant protection requirement. Having some ability to choose one alternative over the other should make both alternatives more acceptable." *Id.* at 28,999. The evidence simply can not bear this strained reasoning.

In the same rulemaking preamble, the Department concluded that there was no reason to expect the passive restraint requirement would create significant "public acceptability concerns" or "consumer resistance." *Id.* at 29,002-01. Nor did it expect any negative reaction to passive restraints to seriously impede their efficacy. *Id.* at 28,989. Consequently, the Secretary had no basis for concluding that the MUL-only alternative was necessary to sweeten the passive restraint pill, or that state legislatures would be encouraged to pass MULs by the prospect of avoiding passive restraints. In fact, it is unclear why the Department thought the states needed to be encouraged at all to pass MULs. According to the record, the Department was impressed by evidence that public support for highway safety laws was growing steadily and dramatically. *See id.* at 28, 994.

The evidence appears to run counter to the Secretary's incentive objective. New York contends that states would pass more stringent MULs but for the Secretary's trapdoor. Indeed, events since the Rule's promulgation indicate that New York is correct. The states that have passed MULs have designed weaker, less comprehensive statutes so as to avoid compliance with the Rule's criteria for consideration in the two-third's trapdoor figure. Other states have gone even further and provided for automatic repeal of their MULs should the Department count their populations toward the automatic rescission provision. New York Supp. Brief at 6.

Regardless of the reasonableness of the incentive device, the either/or scheme arrived at by the Secretary raises a serious statutory problem. The Secretary's overt intent in implementing the provision was to affect state legislation, specifically state legislation regulating driver behavior. That is a regulatory design specifically withheld from the Secretary by the statute under which she acted.

It is axiomatic that in implementing legislation the Secretary must perform in accordance with Congress' purposes in enacting the legislation. See *Pacific Legal Foundation v. Department of Transportation*, 593 F.2d 1338, 1343 (D.C.Cir.), *cert. denied*, 444 U.S. 830, 100 S.Ct. 57, 62 L.Ed.2d 38 (1979); *SEC v. Chenery Corp.*, 332 U.S. 194, 67 S.Ct. 1575, 91 L.Ed. 1995 (1947). Accordingly, in reviewing the Department's decision we must ensure that the agency has "remain[ed] within the bounds of [its] delegated authority." See *Office of Communication of United Church of Christ v. FCC*, 707 F.2d 1413, 1422-23 (D.C.Cir.1983). Neither the ingenuity nor the efficacy of a regulatory scheme can save it from challenge as unauthorized action.

Both the language and legislative history of the National Traffic and Motor Safety Act of 1966 (the Act), 15 U.S.C. §§ 1381 et seq. (1982), posit that Congress has authorized the Department to adopt automobile safety standards which mandate performance characteristics of equipment and vehicles — exclusively. The Act directs the Secretary to establish "motor vehicle safety standards," *id.* § 1392(a), defined as "a minimum standard for motor vehicle performance, or motor vehicle equipment performance . . .," *id.* § 1391(2). " 'Motor vehicle safety' means the performance of motor vehicles or motor vehicle equipment. . . ." *Id.* § 1391(1). Behavior of drivers is not within the permitted scope of safety standards under the Act. Nor did the statute contemplate that the Secretary would delegate any of her automotive safety standards authority to the states. Nor did Congress intend such results.

When Congress has sought to permit the Secretary to influence driver behavior it has specifically authorized her to structure state programs. For example, pursuant to the Highway Safety Act of 1982, 23 U.S.C. §§ 401 et seq. (1982), states must submit to the Secretary for approval driver education programs designed to reduce traffic accidents and resultant losses. Congress explicitly provided that "[s]uch programs shall be in accordance with uniform standards promulgated by the Secretary." It then went on to outline the performance criteria which she is to employ in

designing the standards. *Id.* § 402(a). Similarly, Congress itself has set up incentive schemes when it intended the Secretary to implement federal safety standards by delegating her authority to the states. The Surface Transportation Assistance Act of 1978, 23 U.S.C. §§ 101 et seq. (1982), offers the best example. There Congress provided that the Secretary may not approve federal funds for highway construction and repairs in any state which has a maximum speed limit above fifty-five miles per hour. *Id.* § 154(a). Congress adopted a more direct incentive in its approach to the drunk driving problem. It directed the Secretary to make grants to "states which adopt and implement effective programs to reduce traffic safety programs resulting from persons driving while [intoxicated or under the influence of drugs]." *Id.* § 408. Congress then spelled out the minimum statutory provisions that the state must adopt in order to be eligible.

When Congress intends to authorize such action by the Secretary it says so in no uncertain terms. The authority cannot be implied. See *Calvert Cliffs' Coordinating Committee, Inc. v. Atomic Energy Commission*, 449 F.2d 1109, 1122-27 (D.C. Cir. 1971). There are no parallel provisions in the National Traffic and Motor Vehicle Safety Act.

With the Act, Congress meant to shift the focus of federal automobile safety regulation away from the prior concern over the driver's actions and capacity and toward the "role of the car itself." S.Rep. No. 1301, 89th Cong., 2d Sess. 6 (1966), *reprinted in* 1966 U.S. Code Cong. & Ad. News 2710. The Supreme Court, in referring to the Department's power to adopt safety standards under the Act, observed that "Congress decided that at least part of the answer [to the problem of highway deaths and injuries] lies in improving the design and safety features of the vehicle itself." *State Farm*, 463 U.S. at 33, 103 S.Ct. at 2861. Since safety features would become effective automatically, regardless of human action or inaction, it was hoped that the benefits would be more readily felt. Regulation of driver behavior was left to the states.

In response to New York's challenge to her statutory authority, the Secretary contends that she is permitted to take state safety laws into account in determining whether federal standards will

be "appropriate." This is unquestionably true, but misses the mark. While she may consider the effect of state laws which govern driver behavior, she may not seek to *affect* state laws which govern driver behavior. Mandatory seatbelt use laws regulate behavior, they render failure to "buckle-up" illegal and punishable. The MUL-or-passive restraint provision not only is intended to "encourage" states to adopt MULs, 49 Fed.Reg. at 28,998, 28,999, but it also seeks to set the terms of the regulation, to define the scope of the illegality and severity of the punishment. See 49 C.F.R. § 571.208-S4.1.5.2 (1984) (setting out the four conditions necessary for MUL compliance with the provision). This "incentive" is provided to fulfill the safety objectives of the Act. 49 Fed.Reg. at 28,999. Such attempts at indirect regulation of driver (not to mention passenger) behavior traverses the bounds of the Department's statutory authority.

In sum, the Secretary's disregard for the coexistence of MULs and a passive restraint requirement is arbitrary and capricious for two reasons. First, the Department failed to substantiate its conclusion that MULs covering only two-thirds of the population would be more beneficial than an automatic restraint requirement combined with promotion of MULs; it overlooked the evidence that the combination might greatly increase lives saved and injuries prevented, compared to either method alone, let alone MULs covering only two-thirds of the population. Second, the Secretary's "incentive" approach is outside the agency's mandate under the Act in that its intent, if not its effect, is to influence driver behavior at the state level and its methodology is through delegation of strictly federal authority to the states.

II

A

New York urges the court to hold that the evidence can only reasonably support the requirement of a nondetachable automatic belt. The majority disparages New York's arguments. Based on the Secretary's stated justifications, it upholds her decision to allow satisfaction of the passive restraint requirement

through installation of detachable automatic belts. Maj. Op. at 487. I cannot understand her reasoning and agree with New York that the evidence all points the other way.

The Secretary reasoned that non-detachable belts are the most coercive passive restraints, and would therefore cause the strongest negative public reaction. 49 Fed. Reg. at 28,993, 29,002. As the majority correctly states, the Secretary may appropriately “weigh [this consideration] in the balance.” See Maj. Op. at 487. But the relevant data supports neither the Secretary’s “weighing” process nor her subsequent conclusion that detachable belts should be permitted.

The Secretary indicated that 10 to 20 percent of the public might cut non-detachable belts. 49 Fed. Reg. at 28,993. Nevertheless, she concluded that a large proportion of the public would remain protected by non-detachable belts. See *id.* at 29,003. The Secretary does not explain why this situation is not more protective of safety than detachable belts in all cars. Indeed, she cannot rationally explain why without first finding what percentage of the population would detach detachable belts. Obviously, if more than twenty percent of the public will not use detachable belts, the safety factor is clearly in favor of the non-detachable option. The evidence seems to indicate that more people will detach detachable belts than will sever non-detachable ones. See *id.* at 28,984. Thus, upon a fair viewing of the record, the non-detachable scenario appears to offer greater protection.

The Secretary offered a second rationale which the majority also finds convincing. She judged that non-detachable belts would require manufacturers to eliminate the center front seat, noting that “[t]here is no commercially developed technology to provide an automatic belt for the center seat.” *Id.* at 28,993. While the manufacturers’ contention was disputed, even if it is fully accurate it does not provide a complete rationale for the rejection of a non-detachable belt mandate.

Congress charged the Secretary with the protection of safety. See 15 U.S.C. § 1392; *State Farm*, 463 U.S. at 55, 103 S.Ct. at 2873. Although the Act permits the Secretary to consider whether

the proposed standard is "reasonable, practicable and appropriate" for the automobile for which it is prescribed, "[t]he Act intended that safety standards not depend on current technology and could be 'technology-forcing' in the sense of inducing the development of superior safety design." *State Farm*, 463 U.S. at 49, 103 S.Ct. at 2870 (admonishing the Department for creating more lenient standards in response to auto manufacturers' unwillingness to comply with safer devices). New York and the record suggest that technology already exists to alleviate the supposed problem. The Act directs the Secretary to "consider relevant available motor vehicle safety data" in establishing her standard. 15 U.S.C. § 1392(f)(1). She may not sacrifice safety by failing to weigh all the relevant factors of each viable alternative.

The Secretary never balanced the "center-seat problem" against the non-detachable belt's advantages. She stressed only their disadvantages. *See* 49 Fed.Reg. at 28,992-93, 29,002. Furthermore, she overlooked evidence which mitigates the detractions of the option. For example, elsewhere in the report, the Secretary noted that fewer than one-third of the cars sold in 1982 had center front seats and the number has been steadily declining. The center seat is rarely used and the vast majority of its occupants are small children who are covered independently by mandatory automatic child restraint laws in all but two states. *Id.* at 28,996. The relative number of cars and passengers affected by any inconvenience would appear to be very small, when compared with the increase in lives saved through increased use of non-detachable belts. *See id.* at 28,984.

Having failed to fairly view the relevant data before her and adequately balance the evidence in reaching her conclusion, the Secretary has abdicated her statutory duty to implement laws which enhance automobile safety. Accordingly, her decision to not require non-detachable seatbelts is arbitrary and capricious.

B

New York also challenges the Secretary's refusal to mandate installation of airbags in all automobiles. The majority upholds

the Secretary's decision, simply noting that the Secretary concluded that airbags' safety would not be worth their high cost. *See* Maj. Op. at 488. I believe that the Secretary's decision "runs counter to the evidence before the agency" and therefore constitutes arbitrary and capricious rulemaking. *See State Farm*, 463 U.S. at 43, 103 S.Ct. at 2866.

As the Department noted, "[a]irbags offer a distinct advantage over other occupant restraints in that they ensure a usage rate of nearly 100 percent for both drivers and passengers." 49 Fed.Reg. at 28,991. According to the Department's research, under any reasonable scenario airbags save more lives than any other restraint. In addition, airbags prevent more moderate and critical injuries than do seatbelts. *See id.* at 28,984-86 & Table 5 (comparing relative effectiveness of airbags, seatbelts and automatic restraints). Despite this evidence of the superiority of airbags, the Secretary ultimately declined to require them.

The Secretary proffered two rationales for her decision. First, she cited financial cost. *Id.* at 28,990-01. The Department estimated that installation of airbags in all three front seat positions of a car would cost \$320 more per car than manual belts. The majority also notes that the estimated replacement cost of a deployed airbag is \$800. Maj. Op. at 488. The majority credits the Secretary's conclusion that "[i]n light of these cost estimates, . . . the safety benefits of airbags would not be worth their high cost." Maj. Op. at 488. The conclusion cannot be reached from the facts that are used.

The majority reiterates the Secretary's conclusion that the replacement cost of airbags "mak[es] it likely that many airbags would not be replaced once used." Maj. Op. at 488. The presumed result is that "there would be no protection for the front seat occupants of [that] automobile." 49 Fed.Reg. at 29,001. I think the argument is almost silly. As the Department itself concedes, few airbags are inadvertently deployed. 49 Fed.Reg. at 28,984. The vast majority are deployed due to sudden deceleration from moderate or high speeds. Often this deceleration will be caused by or result in frontal impact. Some of these cars will

be totalled and the cost of installing new airbags is moot. In the Department's own estimation, even when not allowing for wrecked cars, few cars would be affected by the high cost of replacement. *See id.* at 28,984 (non-replacement together with dismantling would leave only 2 percent of all cars without bags at any one time).

As to those cars that are worth repairing after a front-end collision in which the airbags were deployed, the Department failed to recognize that it should be considering a unique sub-group of the population. In accepting the Secretary's reasoning, the majority relies upon the Department's finding "that 'only a small percentage [of the public] appears willing to pay more than \$400' " for airbags. *Maj. Op.* at 488, quoting 49 Fed.Reg. at 28,988. Surely this opinion poll might yield different results if the "public" was comprised of those who had previously been protected in accidents by deployed bags. The record does not indicate how resistant the consumer would be to paying \$800 to replace the devices that saved the car's occupants from death or serious injury. If speculation were in order, I would venture that such a consumer would find \$800 a reasonable investment.

Similarly, the Secretary mistakenly characterized the installation costs of airbags as being unacceptable to the public. The Department's \$320 estimate falls well within the range found acceptable in its public opinion survey. *See* 49 Fed.Reg. at 28,988 ("a range of approximately \$150-350"). Admittedly, as the majority points out, automobile manufacturers' cost estimates are higher, but the record notes much lower estimates as well. *Id.* at 28,990. The Department specifically concluded that "[t]he costs of existing automatic restraint systems [including airbags] are reasonable. . . ." *Id.* at 28,996. And yet the Secretary inexplicably finds the cost of airbags prohibitive.

In sum, the agency has misapplied the cost-benefit analysis dictated by the Act, and therefore is not due the deference to its "expertise" which the majority confers. As the majority observes, *Maj. Op.* at 488, the Supreme Court noted in *State Farm* that "[t]he agency is correct to look at the costs as well as the benefits

of Standard 208.” 463 U.S. at 54, 103 S.Ct. at 2872. But the Court also reminded the Department that when considering the reasonableness of the costs, it “should bear in mind that Congress intended safety to be the pre-eminent factor under the Act.” 463 U.S. at 55, 103 S.Ct. at 2873 (citing H.R. Rep. No. 1776, 89th Cong., 2d Sess., 16 (1966)). The Court construed the Act as mandating an effective safety measure unless its incremental costs are more than minimal. *See id.* at 54-55, 103 S.Ct. at 2872-2873. The Secretary appears to have eschewed this advice. She focused on costs, not safety. The \$320 incremental cost for airbags in context appears minimal. The agency’s fears that the public may resent paying more for airbags do not reasonably override the agency’s own findings regarding the superior safety-effectiveness of airbags. *Cf.* S.Rep. No. 1301, 89th Cong., 2d Sess. 6 (1966), *reprinted in* 1966 U.S. Code Cong. & Ad. News 2709, 2714 (“safety shall be the overriding consideration in the issuance of standards”).

The Secretary’s second rationale for rejecting an airbag requirement is a forecasted lack of public enthusiasm. The Secretary noted, and the majority recounts, public fears regarding airbags—fears which the Department admits “can be adequately addressed.” 49 Fed. Reg. at 29,001. In her explanation of the Final Rule, however, the Secretary fails to note, or apparently give *any* weight to, the Department’s finding that “[a]irbags were rated highest [among manual belts, automatic belts and airbags] on comfort, convenience and appearance and were perceived to be safer than other restraint systems by infrequent belt users.” *Id.* at 28,988. Thus, even on the public acceptability factor alone, the evidence is at best mixed for and against airbags.

The agency is entitled to consider anticipated adverse public reaction. *See Pacific Legal Foundation*, 593 F.2d at 1345. However, it may not extract only negative predictions and posture them as explanations for rejecting highly superior safety devices. The majority would permit the Secretary to leave the determination to the “real-world experience [of] the marketplace.” *Maj. Op.* at 488. This solution seems facile.

The Act charges the Secretary with meeting the needs of motor vehicle safety. Here, the Secretary has considered only one side of an argument that at best bears only tangentially on her decision and has given it paramount importance.

The record is overwhelming that airbags would save more lives and prevent more injuries than automatic belts or any reasonable scenario of seatbelt use. The Secretary has inadequately explained her reasons for reaching a finding which is at odds with this evidence. Neither justification she advances provides a sufficient basis for not requiring airbags in all automobiles. There is no "rational connection between the facts found and the choice made." See *State Farm*, 463 U.S. at 42, 103 S.Ct. at 2866 (quoting *Burlington Truck Lines, Inc. v. United States*, 371 U.S. 156, 168, 83 S.Ct. 239, 246, 9 L.Ed.2d 207 (1962)). Thus, the Secretary's decision should be vacated as arbitrary and capricious.

C

Finally, New York claims that the Secretary acted arbitrarily and capriciously in failing altogether to consider, let alone adopt, the alternative of requiring both airbags and non-detachable automatic belts. The majority makes a specious argument that the Secretary did consider this alternative and then concludes that she acted appropriately in rejecting the option. I find that the Secretary "entirely failed to consider [this] important aspect of the problem." See *State Farm*, 463 U.S. at 43, 103 S.Ct. at 2867.

The majority states that the Secretary's discussion of the weaknesses of non-detachable belts was intended to both show that detachable belts should be a means of compliance under the Rule and respond to the argument that non-detachable belts should be required together with airbags. The majority then sketches its three reasons for this conclusion. Maj. Op. at 489.

First, the majority opines that individual weaknesses of airbags and non-detachable belts are germane to the desirability of requiring both. This ignores the possibility that the individual weaknesses might be alleviated by requiring both, in tandem.

Specifically, research noted in the record has found that airbags function very well in non-catastrophic, frontal collisions up to speeds of 45 miles per hour, but are less effective in side or angle impacts, rollovers, and catastrophic frontal crashes. 49 Fed. Reg. at 28,986. The Department thus concluded, “the most effective system is an airbag plus a lap and shoulder belt. To obtain maximum protection in not only frontal, but also side and roll over accidents, occupants of cars with airbags and lap belts must use a lap belt to supplement the airbag.” *Id.* In these types of collisions seatbelts would fill in for the low effectiveness of airbags. Even at the 12.5 percentage usage estimated for manual belts, the Department postulated that many more lives would be saved by a combination of airbags and belts than by any one alternative means used alone. *See id.* at 28,986, Table 5; page 13 *supra*. The record, otherwise replete with estimates, data and analysis, does not once attempt to analyze the consequences of combining airbags with non-detachable belts, where usage, according to the record, is at least 80 percent.

The second reason postulated by the majority is that the Secretary expressly invoked her earlier discussion of various alternatives, including requiring airbags for all cars. The majority erroneously believes this is responsive to the claim that *both* airbags and non-detachable belts should be required. The possibility that the relevant data would change when options are considered together or in groups was never examined by the Secretary.

Third, the majority claims that the section’s title “Airbags and/or Non-Detachable Seatbelt,” indicates an intent to address the option of requiring airbags and non-detachable seatbelts. Inferring intent from two words in the section title not only seems tenuous at best, but incorrectly assumes that intent is as good as act. If the Secretary failed to address this option, even if she intended to, she cannot be said to have considered the option. The plain words within the section belie the majority’s interpretation: “The rationals [sic] provided in the preceding sections for adopting the new rule and for not retaining the old rule or amending it to require airbags in all cars essentially [sic] provides [sic] the basis for the Department’s decision not to amend the old rule to

require either airbags or nondetachable belts or just nondetachable belts." 49 Fed.Reg. at 29,002 (referring to the agency's decision to give automobile manufacturers an option rather than mandate any one method). The broken grammar, spelling and syntax suggest the lack of consideration that was given to the whole subject of airbags. There is not a word about the option of airbags *plus* non-detachable automatic belts.

The Final Rule is not merely slightly unclear on the issue, as the majority would have us believe. It is silent. Given the Secretary's lack of consideration, the majority's enigmatic statement as to the reasonableness of her "decision" is extravagant praise for non-performance.

III

The subject of how to enhance automobile safety remains the controversial subject it has always been. Congress has wrestled with it in numerous contentious and agonizing battles. No statutory proposal has ever commanded universal enthusiasm, and the statutes on the books have been criticized for what they contain and for what they lack. It is not for the agency or the courts to settle these basic policy disputes. Rather, both branches of government have an obligation to apply and enforce the mandates that Congress has laid down. Because, as New York contends, the agency failed to do so, and because my colleagues have given these agency failures a pass, I dissent.

Tuesday
July 17, 1984

FEDERAL REGISTER

Part II

Department of Transportation

National Highway Traffic Safety
Administration

49 CFR Part 571

Federal Motor Vehicle Safety Standard;
Occupant Crash Protection; Final Rule

DEPARTMENT OF TRANSPORTATION**National Highway Traffic Safety
Administration****49 CFR Part 571****(Docket No. 74-14; Notice No. 36)****Federal Motor Vehicle Safety
Standard; Occupant Crash Protection****Agency: Department of Transportation
(DOT).****Action: Final rule.**

Summary: This Rule requires the installation of automatic restraints in all new cars beginning with model year 1990 (September 1, 1989) unless, prior to that time, state mandatory belt usage laws are enacted that cover at least two-thirds of the U.S. population. The requirement would be phased in by an increasing percentage of production over a three-year period beginning with model year 1987 (September 1, 1986). To further encourage the installation of advanced technology, the rule would treat cars equipped with such technology other than automatic belts as equivalent to 1.5 vehicles during the phase-in.

Dates: The amendments made by this rule to the text of the Code of Federal Regulations are effective August 16, 1984.

The principal compliance dates for the rule, unless two-thirds of the population are covered by mandatory use laws, are:

September 1, 1986—for phase-in requirement.

September 1, 1989—for full implementation requirement.

In addition: February 1, 1985—for center seating position exemption from automatic restraint provisions.

Address: Petitions for reconsideration should refer to the docket and notice numbers set forth above and be submitted not later than August 16, 1984 to: Administrator, National Highway Traffic Safety Administration, 400 Seventh Street, SW., Washington, D.C. 20590.

For Further Information Contact:

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I. Summary of the Final Rule

After a thorough review of the issue of automobile occupant protection, including the long regulatory history of the matter, the comments on the Notice of Proposed Rulemaking (NPRM) and the Supplemental Notice of Proposed Rulemaking (SNPRM); and extensive studies, analyses, and data on the subject; and the court decisions that have resulted from law suits over the different rulemaking actions, the Department of Transportation has reached a final decision that it believes will offer the best method of fulfilling the objectives and purpose of the governing statute, the National Traffic and Motor Vehicle Safety Act. As part of this decision, the Department has reached three basic conclusions:

- Effectively enforced state mandatory seatbelt use laws (MULs) will provide the greatest safety benefits most quickly of any of the alternatives, with almost no additional cost.
- Automatic occupant restraints provide demonstrable safety benefits, and, unless a sufficient number of MULs are enacted, they must be required for the most frequently used seats in passenger automobiles.
- Automatic occupant protection systems that do not totally rely upon belts, such as airbags or passive interiors, offer significant additional potential for preventing fatalities and injuries, at least in part because the American public is likely to find them less intrusive; their development and availability should be encouraged through appropriate incentives.

As a result of these conclusions, the Department has decided to require automatic occupant protection in all passenger automobiles based on a phased-in schedule beginning on September 1, 1986, with full implementation being required by September 1, 1989, unless, before April 1, 1989, two-thirds of the population of the United States are

covered by MULs meeting specified conditions. More specifically, the rule would require the following:

Passenger cars manufactured for sale in the United States after September 1, 1986, will have to have automatic occupant restraints based on the following phase-in schedule:

- Ten percent of all automobiles manufactured after September 1, 1986.

- Twenty-five percent of all automobiles manufactured after September 1, 1987.

- Forty percent of all automobiles manufactured after September 1, 1988.

- One-hundred percent of all automobiles manufactured after September 1, 1989.

- The requirement for automatic occupant restraints will be rescinded if MULs meeting specified conditions are passed by a sufficient number of states before April 1, 1989 to cover two-thirds of the population of the United States.

- During the phase-in period, each passenger automobile that is manufactured with a system that provides automatic protection to the driver without automatic belts will be given an extra credit equal to one-half of an automobile toward meeting the percentage requirement.

- The front center seat of passenger cars will be exempt from the requirement for automatic protection.

- Rear seats are not covered by the requirements for automatic protection.

II. BACKGROUND

Introduction

The Supreme Court Decision

On October 23, 1981, the National Highway Traffic Safety Administration (NHTSA) issued an order pursuant to section 103 of the National Traffic and Motor Vehicle Safety Act,

15 U.S.C. 1392, amending Federal Motor Vehicle Safety Standard No. 208, *Occupant Crash Protection* (49 CFR 571.208; "FMVSS 208"), by rescinding the provisions that would have required the front seating positions in all new cars to be equipped with automatic restraints (46 FR 53419; October 29, 1981).

On June 24, 1983, the Supreme Court held that NHTSA's rescission of the automatic restraint requirements was arbitrary and capricious. *Motor Vehicle Manufacturer's Association v. State Farm Mutual Automobile Insurance Co.*, 103 S.Ct. 2856. The agency had rescinded because it was unable to find that more than minimal safety benefits would result from the manufacturers' plans to comply with the requirement through the installation of automatic belts. In particular, the Court found the agency had failed to present an adequate basis and explanation for rescinding the requirement. The Court also stated that the agency must either consider the matter further or adhere to or amend the standard along the lines that its "reasoned analysis" and explanation supports.

By a five to four vote, the Court held that the agency had been too quick in dismissing the benefits of detachable automatic belts. The Court stated that the agency's explanation of its rescission was not sufficient to enable the Court to conclude that the agency's action was the product of reasoned decision making. The Court found that the agency had not taken account of the critical difference between detachable automatic belts and current manual belts. "A detached passive belt does require an affirmative act to reconnect it, but—unlike a manual seatbelt—the passive belt, once reattached, will continue to function automatically unless again disconnected."

The Court unanimously found that, even if the agency was correct that detachable automatic belts would yield few benefits, that fact alone would not justify rescission. Instead, it

would justify only a modification of the requirement to prohibit compliance by means of that type of automatic restraint. The Court also unanimously held that having concluded that detachable automatic belts would not result in significantly increased usage, NHTSA should have considered requiring that automatic belts be continuous (i.e., nondetachable) instead of detachable, or that FMVSS 208 be modified to require the installation of airbags.

The 1983 Suspension

On September 1, 1983, the Department suspended the automatic restraint requirement for one year to ensure that sufficient time was available for considering the issues raised by the Supreme Court's decision (48 FR 39908).

The NPRM

On October 14, 1983, the Department issued a notice of proposed rulemaking (NPRM) (48 FR 48622) asking for comment on a range of alternatives, including the following:

Retain the automatic occupant protection requirements of FMVSS 208. Under this alternative, the substantive automatic occupant protection requirements of FMVSS 208 would be retained, but a new compliance date would have to be established. Compliance could be by any type of automatic restraint including detachable belts.

Amend the automatic occupant protection requirements of FMVSS 208. Numerous alternatives were proposed. For example, an amendment could require compliance by airbags only or by airbags or nondetachable automatic belts only. Subalternatives included automatic protection for the full front seat, the outboard seating positions, or the driver only. An additional alternative would have required that cars be manufactured with an airbag retrofit capability.

Rescind the automatic occupant protection requirements of FMVSS 208. The Department could again rescind the requirements if its analysis led it to that conclusion. The

Supreme Court decision does not bar rescission after the Department "consider[s] the matter further."

The NPRM also proposed other actions that could be taken in conjunction with, or as a supplement to, the above alternatives. They were as follows:

Conduct a demonstration program. Such a program could be along the voluntary lines suggested by Secretary Coleman in 1976 and would be accompanied by a temporary suspension of FMVSS 208's automatic occupant protection requirements. It would be designed to acquaint the public with the automatic restraint technologies so as to reduce the possibility of adverse public reaction and to obtain additional data to refine effectiveness estimates.

Seek mandatory State safety belt usage laws. The Department could seek Federal legislation that would either establish a seatbelt use requirement or provide incentives for the States to adopt and enforce such laws. If large numbers of persons wore existing manual belts, there would be less need for automatic restraints.

Seek legislation mandating consumer option. Under this alternative, the Department would seek Federal legislation requiring manufacturers to provide consumers the option of purchasing any kind of restraint system: airbag, automatic belt, or manual belt.

Following the issuance of the NPRM, the Department held public meetings in Los Angeles, Kansas City, and Washington, D.C. One hundred fifty-two people testified at these hearings. The public comment period on the NPRM closed on December 9, 1983. The Department received over 6,000 comments on that NPRM by the close of the comment period. Since then, the Department has received an additional 1,800 comments. Some of these comments raised issues or led to the identification of other alternatives on which the Department wanted to receive further public comment.

The SNPRM

As a result of the desire for additional public comment, the Department issued a supplemental notice of proposed rulemaking (SNPRM) on May 10, 1984 (49 FR 20460).

The SNPRM asked for comment on issues involving the following areas: The public acceptance of automatic restraints, the usage rates and the effectiveness of the various restraint systems, the benefits that would be derived from the various alternative means of protecting automobile front seat occupants, including potential insurance premiums savings, and the testing procedures that would be required for automatic restraints. The SNPRM also sought comment on four additional proposed alternatives for occupant crash protection:

Automatic restraints with waiver for mandatory use law States. Under this proposal, automatic restraints would be required in all cars manufactured after a set date, but this requirement would be waived for vehicles sold to residents of a State which had passed a mandatory safety belt use law (MUL).

Automatic restraints unless three-fourths of States pass mandatory use laws. Under this proposal, automatic restraints would be required in all cars manufactured after a set date, unless three-fourths of the States had passed mandatory use laws before that date.

Mandatory demonstration program. This alternative involves a mandatory demonstration program, which was suggested by the Ford Motor Company. Each automobile manufacturer would be required to equip an average of five percent of its cars with automatic restraints over a four-year period.

Driver's-side airbags in small cars. Under this alternative, airbags would be required only for small cars and only for the driver's position in those cars.

The comment period on the SNPRM closed on June 13, 1984. The Department received over 130 comments.

The Statute

Pursuant to the National Traffic and Motor Vehicle Safety Act of 1966, as amended, the Department of Transportation is directed to "reduce traffic accidents and deaths and injuries to persons resulting from traffic accidents." The Act authorizes the Secretary of Transportation to issue motor vehicle safety standards that "shall be practicable, shall meet the need for motor vehicle safety, and shall be stated in objective terms." In issuing these standards, the Secretary is directed to consider "relevant available motor vehicle safety data," whether the proposed standard "is reasonable, practicable and appropriate for the particular type of motor vehicle . . . for which it is prescribed," and the "extent to which such standards will contribute to carrying out the purposes" of the Act.

The Safety Problem

Occupants of front seats in passenger cars account for almost half of the deaths that occur annually in motor vehicle accidents (including pedestrian fatalities). In recent years (1981-1983), an average of approximately 22,000 persons have been killed annually in the front seats of passenger cars; another 300,000 suffered moderate to severe injuries and more than 2 million had minor injuries. Approximately 55 percent of these fatalities and injuries occur in frontal impacts and another 25 percent occur in side impacts. Table 1 shows the number of fatalities, by seating position, for 1975-1982, while Table 2 shows data for injuries, by severity and seating position, for 1982, the latest year for which such a breakdown is available. Table 3 provides estimates of similar data for 1990 to illustrate the impact of any rulemaking. For the 1990 data, it was assumed (for purposes of this rulemaking analysis only) that manual belt usage rates would remain the same as current rates.

Table 1.—Front Seat Passenger Car Fatalities With Known Seating Position

	<u>Driver</u>	<u>Front middle</u>	<u>Front right</u>	<u>Other front</u>	<u>Total</u>
1975	16,270	644	5,601	21	22,536
Percent	72.2	2.9	24.8	0.1	100
1976	16,375	602	5,714	24	22,715
Percent	72.1	2.7	25.1	0.1	100
1977	16,967	577	5,992	14	23,550
Percent	72.0	2.5	25.4	0.1	100
1978	18,224	627	6,180	16	25,047
Percent	72.7	2.5	24.7	0.1	100
1979	18,267	513	5,968	6	24,754
Percent	73.8	2.1	24.1		100
1980	17,966	526	6,012	9	24,513
Percent	73.3	2.2	24.5		100
1981	17,722	460	5,844	6	24,032
Percent	73.8	1.9	24.3		100
1982	15,225	373	5,202	16	20,816
Percent	73.1	1.8	25.0	0.1	100

Table 2.—Distribution of Front Seat Passenger Car Occupant Injuries by Severity Level (1982)

<u>Injury severity</u>	<u>Driver</u>	<u>Front middle</u>	<u>Front right</u>	<u>Other front</u>	<u>Total</u>
Minor	1,388,519	29,914	515,786	2,526	1,936,745
Moderate	187,660	6,467	47,417	1,604	243,148
Serious	45,627	239	16,100	0	62,016
Severe	5,592	0	2,411	0	8,003
Critical	3,233	0	728	0	3,961
Percent of minor injuries	71.7	1.5	26.6	0.2	100.0
Percent of moderate to critical injuries	76.3	2.1	21.0	0.6	100.0

Table 3.—Projection of Fatalities and Injuries for 1990

	<u>Driver</u>	<u>Front middle</u>	<u>Front right</u>	<u>Total</u>
Fatalities	18,050	370	6,140	24,560
Percent	73.5	1.5	25.0	100.0
Moderate to critical:				
Injuries	290,000	5,000	75,000	370,000
Percent	78.5	1.5	20.0	100.0
Minor injuries	2,110,000	40,000	800,000	2,950,000
Percent	71.5	1.5	27.0	100.0

To fully understand the benefits of various occupant restraint systems, it is helpful to recognize the frequency with which various front seating positions are used in cars involved in injury-producing accidents. As Tables 1 and 2 illustrate, three-fourths of all front seat occupant fatalities and serious injuries are experienced by drivers and almost all of the remainder are passengers in the right outboard seat. Thus, automatic protection is likely to have three times the level of benefits for drivers as for front seat passengers. Additionally, not only are occupants of the center seat rarely involved in fatal or injury-producing crashes, but their involvement is declining as shown in the Tables. This decline is thought to be occurring, at least in part, because of the decline in the number of automobiles manufactured with bench-style front seats.

Current Occupant Restraint Technology

Manual Belts

Manual belts are safety belts that will provide protection in a crash if the occupant places the belt around himself or herself and attaches it. Manual belts can come in two types: Lap belts that fit around the pelvic region and combined lap and shoulder belts, which are found in the great majority of all new cars sold today. Manual shoulder belts are equipped with inertial reels that allow the belt webbing to play out so that the occupant can reach forward freely in the occupant compartment under normal conditions, but lock the belt in place if a crash occurs. To remind occupants to use their belts, FMVSS 208 requires the installation of a brief (4-8 seconds) audible and visible reminder.

Automatic Belts

The automatic belt is similar in many respects to a manual belt but differs in that it is attached at one end between the seats in a two front seat car and at the other end to the interior

of the door, or in the case of a belt with a motorized anchorage, to the door frame. The belt moves out of the way when the door is opened and automatically moves into place around the occupant when the door is closed. Thus, the occupant need take no action to gain the protective benefits of the automatic belt.

Automatic belts differ significantly in their design. Some designs consist of a single diagonal shoulder belt (2-point belt) with a knee bolster located under the dashboard to prevent the occupant from sliding forward under the belt. Other designs include both a lap and a shoulder belt (3-point belt).

The designs differ also in the features and devices included to encourage belt use by motorists and at the same time allow for emergency egress if the car door cannot be opened following a crash. Several designs are described below.

One design takes advantage of the opportunity for the manufacturer to include, on a strictly voluntary basis, an ignition interlock. The belt in that design detaches from the door, but must be reattached before the car can be started the next time. This type of automatic belt (2-point belt with knee bolster) has been installed in more than 390,000 Volkswagen (VW) Rabbits over an eight-year period beginning in 1975. It was also installed on a small number of 1978-79 General Motors (GM) Chevettes. It is still available as an option on Rabbits.

Another design is similar in that the belt detaches, but there is no ignition interlock. The belt may be detached and left that way without affecting the starting of the car. This was the type of automatic belt that most manufacturers had planned to use in complying with the automatic restraint requirement before the agency issued its rescission order. It was briefly offered by General Motors as a consumer option on a Cadillac model.

A third type of automatic belt is a continuous belt that does not detach at either end. Some continuous belts use a spool

release, which plays out additional webbing length. Sufficient slack is created by an emergency release lever so that the motorist can lift the belt out of his or her way and exit in an emergency. Another type of continuous belt with a spool release mechanism is the motorized belt. The belt's outer anchorage is not fixed to the door but runs along a track in the interior side of the door's window frame. When the door is opened, the anchorage moves forward along the track, pulling the belt out of the occupant's way. When the door is closed, the process is reversed so that the belt is placed around the seated occupant. This type of continuous belt, which is a two-point system with a knee bolster and which contains a manual lap belt, has been installed in all Toyota Cressidas for the last several model years and enhances occupant ingress and egress.

Another type of continuous belt was installed on a small number of 1980 Chevettes. The belt consisted of a single length of webbing that passed through a ring near the occupant's inboard hip and served both as a lap and a shoulder belt. The end of the lap belt that was connected to the lower rear corner of the door could be detached from the door. However, the end could not be pulled through the ring. Thus, the effect of detaching the lap belt was to create an elongated shoulder belt. The extra slack in the belt system enabled occupants to get out of their belt in the event of an emergency.

Airbags

Airbags are fabric cushions that are very rapidly inflated with gas to cushion the occupant and prevent him or her from colliding with the vehicle interior when a crash occurs that is strong enough to trigger a sensor in the vehicle. (Generally, the bag will inflate at a barrier equivalent impact speed of about 12 miles per hour.) After the crash, the bag quickly deflates, to permit steering control or emergency egress.

In 1973-1978, General Motors produced approximately 11,000 full-sized Chevrolets, Buicks, Oldsmobiles and Cadillacs equipped with airbags. During the same period, Ford installed airbags in 831 Mercurys. A small number were installed in Volvos also. Today, only a single manufacturer, Mercedes Benz, is offering airbags in the United States. That company began offering airbag-equipped cars in this country beginning with the 1984 model year; it has been selling airbag cars outside the United States since late 1980. Since then, it has sold approximately 22,000 of those cars worldwide, with most sales occurring within the last year or so. GSA has contracted with Ford Motor Company to build 5,000 cars equipped with driver's side airbags. Delivery on these cars is expected to begin in Model Year 1985.

Other Automatic Occupant Protection Technologies

The automatic occupant protection provisions of FMVSS 208 do not specify that particular technologies, such as automatic belts or airbags, be used to comply with the standard. Rather, the standard requires a level of safety performance that can be met by any technology chosen by the manufacturer. Although safety belts and airbags are the most widely discussed technologies, the use of "passive interiors" as a means of compliance is also generating interest.

Under this approach, improvements are made to the vehicle structure, steering column, and interior padding so as to minimize potential occupant injuries. Thus, a "restraint" system, of any kind, is unnecessary for occupant protection in frontal crashes. GM has been actively pursuing "passive interiors."

III. Summary of the Public Comments

Introduction

In this section of the preamble we have summarized the public comments on the Department's October 19, 1983, NPRM and the May 14, 1984 SNPRM. We have presented

the summaries under headings that generally relate to the headings used in the subsequent portions of the preamble. Some of the comments are very generally stated and may relate to more than one issue. Because of the large number of public comments, we have provided a representative sample of the comments made and the commenters who made them. Subsequent portions of the preamble discuss the issues and alternatives and present the Department's position and response to the public comments. The comments are analyzed and responded to in more detail in the Department's Final Regulatory Impact Analysis (FRIA).

Occupant Protection Systems

Usage

Vehicle manufacturers generally agreed that mandating automatic belts would increase usage initially. However, based on their expectation of installing detachable automatic belts if required to install some type of automatic protection, some car manufacturers generally predicted that use would fall close to the current levels for manual belts once the belts were disconnected for the first time. GM believes this to be true for detachable automatic belts, and for nondetachable automatic belts as well. Honda also believes that, while there would be an initial increase in restraint usage if automatic belts were mandated, long-term usage of automatic belts might not be higher than current usage of manual belts. The key determinants would be the comfort and convenience of automatic belts. The other manufacturers believed that automatic belts would probably produce some small usage increase. Chrysler stated that usage for automatic belts would be less than 10 percentage points higher than current usage for manual belts. Ford commented that the use of nondetachable automatic belts would initially be higher than the usage level for detachable automatic belts, but that over the long term it would fall to the same level. Ford said further that occasional belt users would use automatic belts more often than they

currently use their manual belts, but the overall level of usage would not significantly rise.

The car manufacturers generally believe that nondetachable automatic belts would not be practicable since consumers would object strongly to them and, therefore, would defeat and possibly disable them. The manufacturers concluded that there would be little or no increase in usage over manual belt rates.

The Pacific Legal Foundation (PLF) said that mechanically compelled use by unwilling occupants would be no more likely to succeed than legally compelled use by such persons.

On the other hand, the American Seat Belt Council (ASBC) believes that usage of automatic belts would be 50 percent, which is roughly halfway between the current driver usage of 14 percent for manual belts and 80 percent for automatic belts with ignition interlocks. Professor William Nordhaus of Yale University believes that use of automatic belts would increase by 33 percentage points. John Graham of Harvard University found that expert opinion varies on the extent to which automatic belts would increase usage. His survey of seven experts from that detachable automatic belts would increase usage by 10 percentage points with an 80 percent confidence interval of 5 to 40 percentage points.

The issue of use inducing features or reminder mechanisms was raised by several commenters. ASBC believes that a continuous buzzer could double usage, and that buzzers, chimes and lights would all increase usage over levels that could be observed in vehicles without such features. VW stated that a continuous buzzer might be as effective as an interlock. On the other hand, Ford stated that while a continuous buzzer would induce some non-users to wear their safety belts, driver irritation and actions to permanently defeat the system could also be anticipated.

Effectiveness

Manual Belts. The vehicle manufacturers generally stated that current manual lap and shoulder belts are more effective (when used) than either automatic belts or airbags. However, the combination of an airbag and manual lap and shoulder belts was acknowledged to be the most effective system of all.

The Automobile Importers of America (AIA) estimated manual belt effectiveness at 50 percent. Honda expressed the view that, based upon results of its 35 mile per hour crash testing, manual belts may be more effective than airbags in terms of chest acceleration and femur load injury criteria.

Most commenters on the SNPRM believed that the agency's range of effectiveness estimates for manual belts is too low. ASBC concluded that the estimate is too low because the agency estimate of lives saved from manual belt usage is approximately half the value previously cited by the agency. Renault argued that manual belt effectiveness data should not be adjusted to account for the presumably more cautious driving behavior of belt users, since belt use may lead some individuals to drive faster in the belief that they are better protected. VW provided a procedure for calculating manual belt effectiveness from NHTSA's Fatal Accident Reporting System (FARS) data, which led to a very high effectiveness estimate. Ford concluded that the agency's analysis would support a higher range of manual belt effectiveness (50-60 percent). Ford also challenged agency conclusions that manual belts are more effective in preventing moderate to serious injuries than fatalities and that manual belts are not likely to be effective in accidents involving a velocity change of over 35 miles per hour.

Automatic Belts. The manufacturers stated that automatic belts may be less effective than manual belts. Similarly, the National Automobile Dealers Association (NADA) argued that automatic belts may be less effective than current manual belts if the automatic belt is attached to the door. VW and State

Farm disagreed, saying that automatic belts are as effective as manual belts.

Volvo argued that nondetachable automatic belts may be less effective than detachable automatic belts due to a "film spool effect." This effect may occur in 2-door models, if the amount of webbing must be increased to allow entrance of passengers into the rear seat area.

The Insurance Institute for Highway Safety (IIHS) criticized the agency's effectiveness estimates for automatic belts, saying there was no support for the agency's conclusion that such belts, compared with manual belts, may increase the probability of occupant ejection. IIHS also suggested that the agency consider data that show that automatic belts may reduce the probability of the occurrence of head injuries. VW also challenged the conclusion that automatic belts could permit higher rates of occupant ejection. Ford argued that the agency should use a range instead of a point estimate for the fatality reduction of automatic belts. Ford also questioned the agency's conclusion that 3-point automatic belts should be as effective as manual belts, due to the lack of data supporting such a conclusion and the fact that manual belts can be more securely adjusted than automatic belts.

Professor William Nordhaus criticized the agency's adjustment of automatic belt effectiveness data to account for the lower accident experience of drivers who had elected to use belts as compared to nonusers of safety belts. The agency had concluded that as increasing numbers of current nonusers of manual belts were brought into the population of automatic belt wearers, the overall effectiveness of automatic belts would be decreased. Professor Nordhaus argued that the agency overestimated the magnitude of this effect. Professor Nordhaus also argued that automatic belts need not be less effective than current manual belts. In making this argument, he relied on agency crash test data and somewhat different data than those found by the agency to be most probative.

Airbags. Many consumer groups and health organizations indicated their belief that the reliability and effectiveness of airbags has been researched and tested to a far greater extent than any other item of vehicle safety equipment, and that the effectiveness of these devices is "unquestionable."

Allstate stated that airbags are more effective than belts in protecting against head and facial injuries. That company stated that while some of the dummies wearing belts "survive" 35 mph crashes under the injury test criteria, they sustained head and facial injuries far in excess of those produced with airbags at comparable speeds. Allstate noted, also, that belts were not dynamically tested as automatic restraints would be. Citing its field experience, Allstate said that airbags are effective not only in reducing deaths and injuries in frontal crashes but also in reducing injuries in side impact crashes. Allstate challenged the accuracy of the agency's NPRM estimate of airbag effectiveness, pointing out that that analysis was based on the use of restraint technology that is more than 10 years old. Allstate noted the GM itself had admitted that that technology was "obsolete." IIHS stated that, based on its analysis, airbags should be at least 34 percent effective in reducing fatalities.

Ford argued that the number of airbag cars that have been produced to date is too small to adequately answer questions about effectiveness.

PLF expressed the view that the agency really had no evidence that airbags are effective. That group argued that the agency erred in saying that the effectiveness of airbags is probably understated in the field data. According to PLF, DOT cannot know about all of the fatalities that have occurred in accidents involving airbag equipped cars. The group stated that the Department's estimate of airbag effectiveness is overstated to the extent that there are such undetected fatalities. Further, the group believes that the claim of the agency in the Preliminary Regulatory Impact

Analysis (PRIA) that the large size of the cars equipped with airbags leads to an understating and obscuring of the potential effectiveness of airbags in smaller size cars is no more reasonable a conclusion than one that the large size of these cars masks the deficiencies of airbags by offering greater protection to out-of-position occupants and allowing longer deployment times for airbags. This group also asked DOT to provide an updated analysis of injury data for the fleet of airbag cars.

The National Head Injury Foundation stated that the airbag offers unique protection against head injury which even the automatic belt does not.

PLF and VW suggested that the presence of airbags might induce drivers to take greater risks while driving in reliance on the perceived increased protection. PLF argued that these increased risks could easily offset any gains in protection available as a result of the airbags. Professor Orr of Indiana University raised the same point, arguing that the "risk compensation" theory is sound but that the magnitude of its effect was unknown. IIHS submitted a study showing that the implementation of a safety belt use law in a Canadian province did not result in any increased risk taken by drivers. The study looked at the frequency with which certain risky maneuvers were made before and after the law was implemented and found no significant difference. John Graham stated that, based on several studies he has undertaken, any risk-compensation effect is significantly lower than the magnitude of benefits derived from the safety improvements.

Several vehicle manufacturers expressed their view that an airbag is relatively ineffective by itself, and should be viewed as a supplement to a belt system. The Motor Vehicle Manufacturers Association (MVMA) emphasized its view that airbags are effective in frontal crashes only.

In their SNPRM comments, several commenters addressed the agency's estimated range of effectiveness for airbags. IIHS concluded that the range is conservative but not unreasonable

at the middle and high ends. They cautioned, however, that it would be inappropriate to compare the effectiveness of airbags in relation to safety belts by using the low end of the airbag effectiveness range and the middle or high end of the safety belt range. Mercedes Benz commented that its new "supplemental restraint system," which employs an airbag, has worked according to design in all accident situations in which vehicles equipped with the system have been involved.

PLF and VW also said that the Department's effectiveness studies were subjective. PLF argued that DOT was using precisely the same type of analysis that GM had offered and NHTSA had rejected in the 1977 rulemaking on automatic restraints. That group stated that DOT failed to explain this change of view. The PLF also criticized the agency's studies on airbag effectiveness for failing to take into account data for all vehicles using airbags, i.e., the non-GM Air Cushion Restraint System (ACRS) cars. Renault expressed the view that airbag effectiveness could not exceed 20 percent, due to the inability of airbags to provide protection in nonfrontal and ejection accident situations.

Ford argued that notwithstanding the limited amount of actual field data on airbag cars, those data cannot be totally dismissed in arriving at an estimate of airbag effectiveness. Ford also suggests updating field data to include Fatal Accident Reporting System data through 1983, instead of only through 1981 as was done in the PRIA. Ford found two of NHTSA's studies based on the National Crash Severity Study (NCSS) data to provide reasonable estimates of airbag effectiveness but found the third study to be flawed. Ford argued that the latter study was restricted to data from crashes in which airbags would most likely be effective. Ford also challenged a fourth agency study, on injury reducing effectiveness, based on field data, since it tended to show airbags to be most effective in accident situations in which the airbag is unlikely to deploy. Ford also stated that there appeared to be

no basis for the agency's effectiveness range for airbags use in conjunction with safety belts.

Benefits

Several major insurance companies commissioned Professor William Nordhaus of Yale University to provide an updated economic analysis of alternative approaches to automatic crash protection. In response to the NPRM, Professor Nordhaus concluded that automatic crash protection would have net economic benefits to the nation of between \$2.7 and \$4.1 billion per year, while rescission would cost the nation \$33 billion. Professor Nordhaus stated that every year of delay increases fatalities by approximately 5,000 and increases moderate to critical injuries by at least 70,000. His analysis also concluded that the impact of retaining the rule on profits or jobs in the automobile industry, as well as on the national economy, would be miniscule. He stated that automatic crash protection would be cost-beneficial even if automatic belts increased restraint usage by only eight percentage points and even if airbags cost \$825.

Many consumer and health organizations expressed concern that the agency had understated the benefits that would be associated with automatic restraints through their prevention of deaths and injuries. IIHS noted that the agency was relying on police reports to calculate the number of injuries from vehicle accidents. The group submitted evidence that only 70 percent of injuries resulting from vehicle accidents and treated in hospital emergency units were reported to the police. The evidence was taken from a study comparing car accident treatments in northeastern Ohio emergency rooms with police reports of accidents. To compensate for this underreporting of vehicle accident related injuries, this group suggested that the agency multiply its projected number of injuries by 1.4 to give a more accurate indication of the number of vehicular non-fatal injuries that could be expected. Such a step would, of course, increase the benefits associated with automatic

restraints. Another group was also concerned that the agency had underestimated the minimum level of effectiveness of airbags and submitted an analysis showing that airbags would have a minimum effectiveness of 35 percent, instead of the 20 percent minimum used by the agency in the PRIA.

Several of the health organizations commenting on the proposal emphasized that the agency ought to reconsider the human cost of the head and spinal injuries suffered by persons in car accidents. One group submitted data projecting 66,000 head injuries annually as a result of vehicle accidents, with nine percent of those injured persons either dying in the hospital or discharged to chronic institutional care. Another eight percent would be discharged but subject to follow-up medical attention. Many of these victims are young people who have to readjust to life with these injuries, which prevent them from performing even simple tasks they once did for themselves. These impacts are not readily quantifiable in dollars, according to these groups, but are just as significant as economic impacts for the people with family members who have suffered serious head and spinal injuries.

VW asked for an explanation of the methodology used in calculating Table 3 of the SNPRM, since the baseline of fatalities if no restraints were used seems to change with each listed effectiveness rate. This comment also noted that if mandatory usage laws are in effect by 1988, and 70 percent buckle up, the airbags' benefits would not equal the benefits of the mandatory use laws until the 21st century.

Professor Nordhaus states that using NHTSA's effectiveness rates for the various types of restraint systems shows both automatic belts and airbags to be highly cost-beneficial, and that further delays cost the country at least \$24 billion annually. He also stated that the benefits of mandatory belt use laws are so speculative as to necessarily remove those options from any serious consideration.

IIHS stated that DOT's projected airbag usage rate of 98 percent *a fortiori* means that airbags are the most beneficial alternative, because DOT has consistently recognized that the benefits of any of the restraint systems depend almost completely on the usage rates. IIHS repeated its contention that belt nonusers constitute such a disproportionate number of crash-involved occupants that actual reductions in deaths and injuries will be noticeably lower than would be projected for that level of belt use until the usage rate approaches 100 percent.

The insurance companies stated that several companies now have in effect 30 percent premium reductions for first and third party bodily injury liability for cars with automatic restraints. They contended, however, that the benefits associated with this rulemaking are not lower insurance premiums. In their view, the benefits are the prevention or reduction in seriousness of thousands of fatalities and serious injuries annually.

Public Acceptance

State Farm stated that it considered public acceptability of restraint systems to be a very important issue. It argued that a regulatory alternative could not be rejected on the grounds of insufficient public acceptability if the benefits of the alternative would exceed the costs of that alternative. It argued further that the legislative history of the Vehicle Safety Act made it clear that safety was the overriding consideration in implementing the Act. Thus, more weight should be given to the safety benefits of a contemplated safety requirement than to the public acceptability of the devices used to comply with that requirement.

State Farm also said that public reaction has regulatory significance as a legal and practical matter only if it is translated into behavior, that is, if people disable automatic restraints. If not, public acceptability meets the statutory criteria. Public opinion surveys over the last decade, including

the 1983 GM and IIHS surveys, show public support for mandatory automatic restraints. "All studies of usage rates of automatic belts show levels of incremental usage far above break-even levels."

Contradictory evidence was provided on the attitude of the public toward automatic restraints. Consumer Alert provided a public opinion poll showing that fewer than 15 percent of the respondents wanted mandatory automatic restraints. Public Citizen submitted a public opinion poll which it viewed as showing a clear preference for automatic restraints, especially airbags. IIHS cited a recent public opinion poll indicating that 56 percent of the respondents favored requiring automatic restraints on new cars as standard equipment and 37 percent favored requiring that that type of restraint be offered as an option. AAA stated that while consumers may not rush to purchase automatic restraints as options if manual belts were original equipment, they would accept automatic restraints as original equipment, particularly if they could choose between the various types of automatic restraints. Other groups argued that the increased protection against facial, spinal and head injuries afforded by airbags would result in consumers choosing airbags as the preferred automatic restraint, if they are allowed to make that choice. Most of these groups indicated that airbags are less intrusive than automatic belts, and would therefore be more readily accepted by the public.

The manufacturers said that nondetachable belts would raise consumer acceptance problems since they are more coercive than current belts. This expectation is based in part on the interlock experience of 1974. NADA said that the experience with VW Rabbits, Toyota Cressidas and GM Chevettes indicates a lack of consumer acceptance of automatic belt systems and that the GM experience with airbag cars shows a similar lack of consumer acceptance.

Mercedes, on the other hand, said that its system had met with "favorable market acceptance" in Europe and projected

it would be accepted in the U.S. VW said, contrary to dealer statements, that it did not believe its automatic belts had been defeated in the sense of being destroyed but only that the interlock had been defeated, perhaps by dealers themselves.

MVMA submitted a memorandum of law with which GM and VW agreed. Ford and AMC also agreed, adding comments. MVMA restated the State Farm argument saying that State Farm believes the Act forbids NHTSA from considering adverse public reaction to a mandatory automatic requirement except to the extent that the public will disable the equipment. MVMA believes the State Farm position is not consistent with the legislative history of Act, judicial precedent, or prior positions of DOT. MVMA says that public acceptability is part of the "all relevant factors" consideration under the Act. Two 1974 congressional actions shed light on what is acceptable. The ignition interlock ban and congressional review of a mandatory automatic restraint rule (MVMA cites the Senate debate on the 1974 Federal highway aid bill on the congressional review issue). MVMA claims Secretary Coleman's decision was made with these factors in mind. Matters of future probability, as raised in the Coleman decision, are relevant to an agency decision even though they cannot be precisely measured.

GM agreed adding that public acceptability is not a narrow issue.

VW also agreed, stating that public acceptability is a two-faceted problem; State Farm's concern over consumers defeating or destroying the restraint systems and public popularity are equally important. Consumer backlash could result from an expensive or coercive system, such as an ignition interlock. VW claims that airbags have been oversold; fatalities would continue and DOT's credibility would be questioned.

Ford agreed, stating that public acceptance involves far broader issues than disabling unwelcomed equipment. Ford asks what percentage of front seat occupants would defeat

automatic restraints and whether there would be enough benefits to justify the systems. Ford's best projection is that manual and automatic usage will be equivalent over the long run, that is, positive and negative belt use inducement factors for automatic belts will balance out to produce usage rates equivalent to those for active belts. Ford said also that comfort, entry and egress, and the defeatability of automatic belt systems are still unknowns; therefore, a field test is needed.

Chrysler said the State Farm position is too narrow. There must be widespread public perception that benefits are worth the price. It predicted that the automatic restraint requirement would suffer the same fate as the ignition interlock.

Toyota said the State Farm position is inappropriate. The public may press for legislative rescission of an automatic restraint requirement, even though the public does not or cannot disable the system, citing the ignition interlock experience.

BL Technology Ltd. said that public acceptability and usage should be considered together. It said that the NHTSA definition of public acceptance is correct, i.e., "tolerance and use of the restraint system", whether manual or automatic. BL suggests that the U.S. try mandatory seat belt use laws coupled with effective enforcement.

Renault accepts the State Farm interpretation but pointed out that a belt is needed with an airbag. Renault said that public acceptance and use of automatic belts will remain limited.

PLF and Consumer Alert said there is no mandate for an automatic restraint requirement. The issue of public acceptance is not limited to the sole question of deactivating mandatory automatic restraints, it encompasses all factors which may affect DOT's implementation of the Vehicle Safety Act. They said an automatic restraint requirement could cause the public to forestall buying new cars, which would delay the introduction of automatic protection and reduce safety by increasing

the age of the total vehicle population. They also said DOT should consider risk compensation by those forced to wear belts or buy bags, citing John Adams' 1982 SAE paper, which PLF claims DOT has ignored. Experience in other countries is also cited to show that restrained occupants are less likely to be involved in fatalities.

IIHS said that earlier evidence submitted by them and others shows that automatic restraints, especially airbags, are acceptable.

Allstate supports State Farm on the acceptance issue. Allstate argues that if public acceptability is a controlling factor, then we cannot continue with the present manual seat belt requirements, due to low usage levels. They said there is no doubt that airbags have the most public acceptance; automatic belts have greater acceptance than manual belts. Therefore, DOT should reinstate the previous automatic restraint standard.

The American Insurance Association supports the State Farm interpretation. It said DOT should require automatic restraints because they only require toleration by the public to be effective. The standard for public acceptance should be public acquiescence not public preference.

The National Association of Independent Insurors (NAII) said the DOT record shows the mandatory airbags are acceptable.

NADA said State Farm is correct in suggesting that public acceptance should be given a "narrow, legal interpretation." They argued that there are four indicia for determining public acceptance, each with substantial evidenced:

- (1) The public has expressed opposition to coercive occupant restraint devices, e.g., the ignition interlock. The record shows people will disable automatic belts.

- (2) The cost indicates that airbags will not be replaced; therefore, they will be disabled after one use.

(3) A significant number of consumers are unwilling or unable to purchase new vehicles equipped with automatic restraint devices.

(4) Consumers will buy vehicles without automatic restraints, such as vans or pickup trucks, or used cars.

Cost and Leadtime

A number of manufacturers provided cost estimates for automatic restraints. The incremental consumer costs of adding a full airbag system were estimated at \$838 by GM, \$807 by Ford and \$800 by Chrysler. Jaguar provided an estimate of \$1800.

Breed Corporation submitted an estimate of \$140 for its all-mechanical airbag design, assuming a volume of one million units. According to Breed, this estimate has been independently verified by technical experts familiar with auto industry practices, procedures and pricing mechanisms. The estimate does not include necessary vehicle modifications, such as adding knee bolsters. Romeo Kojyo provided an estimate of \$150 for a driver airbag retrofit kit, exclusive of installation and assuming an annual volume of one million units. Ralph Rockow, president of Dynamic Science, stated that airbags could be produced at an incremental consumer price of \$185. The Automotive Occupant Protection Association incorporated the Rockow estimate in its comment and provided a detailed breakdown of costs for \$185 full front passenger system at a production volume of two million units annually.

The incremental consumer costs of adding automatic belts were estimated at \$45 by General Motors and Richard Lohr, a cost estimating consultant, \$115 by Chrysler, \$150 by Jaguar and Honda, and \$200 or more by Nissan and Renault. Peugeot provided an estimate of \$350 for a motorized automatic belt system.

Numerous manufacturers provided comments on required leadtime. In commenting on an automatic belt requirement, GM stated that while 1¾ years is adequate for models already designed, three years are necessary for new designs or nondetachable automatic belts. Chrysler, Mazda and Peugeot also stated that three years are needed for automatic belts. Renault said that 24 months were needed for belts, while AMC said 30-36 months. Nissan provided an estimate of 30-42 months and Ford provided a figure of four years. VW said it could comply immediately for some models but would need four years for all models.

GM's estimate for an airbag requirement was three years for large cars and longer for small cars. Chrysler stated that four to five years would be needed to implement a requirement for full front airbags. AMC stated that 3-3½ years would be necessary for such a requirement, while Ford said 4 years. Renault said 3 years were needed while Saab claimed 58 months were necessary.

The National Safety Council said the automatic restraint requirement should be made effective September 1985, or one year thereafter at the latest. Mr. Lohr, a cost estimator, provided an estimate for automatic belts of 18 months, while the Automotive Occupant Protection Association (AOPA) stated that 18-30 months leadtime would be sufficient.

Two studies were submitted to the docket that analyzed the overall economic effects of an automatic restraint requirement. One study was by Dr. Barbara Richardson, of the University of Michigan, and was sponsored by MVMA. The other study was by Professor William Nordhaus and was sponsored by several major insurance companies.

Dr. Richardson concluded that a requirement for airbags costing between \$300 and \$800 per car would have severe detrimental effects on the automotive industry and the economy as a whole. Dr. Richardson stated that a short-run reduction in vehicle sales of 2.7 percent to 9.7 percent would occur,

as well as an increase in unemployment of between 62,000 and 197,000 persons. She also concluded that gross national product (GNP), wages, disposable income, and personal consumption would decrease.

Professor Nordhaus concluded that an automatic restraint requirement would have a minimal effect on the automobile industry and the national economy as a whole. According to his analysis, an automatic restraint rule would result in an increase instead of a decrease in jobs in the automobile and supply industries.

NADA said the dealership operating costs and costs of automatic repair and service would increase.

Insurance Premium Changes

Numerous insurance industry commenters stated that implementation of an automatic crash protection requirement would provide significant economic benefits in the form of insurance premium reductions. Some commenters provided specific estimates of savings. Others argued more generally that an automatic restraint requirement would result in cost savings and that those savings would be reflected in insurance premium reductions. According to insurance commenters, a number of insurance companies have for some time been offering premium discounts for medical payment coverage for cars equipped with automatic restraints. Those commenters indicated that some discounts apply to all types of automatic restraints, while others are restricted to airbags.

Nationwide stated that installation of airbags in all automobiles would reduce private first- and third-party liability premiums by 24.6 percent or \$31 annually per insured car. Using the Nationwide data, Professor William Nordhaus, in his NPRM comments, estimated that owners of cars equipped with automatic belts would experience consumer insurance cost savings of \$24 per year. Professor Nordhaus estimated that, for vehicles equipped with automatic belts, taking into account consumer cost of the automatic belt, fuel cost and

insurance cost, the total direct financial impact over the life of the vehicle would be to lower the cost of operating an automobile by about \$60. According to Professor Nordhaus, this underestimates true total consumer savings as it omits noninsurance costs, lost wages, medical costs borne by the consumer and pain and suffering. New York State Insurance Superintendent Corcoran states that, for average New York premiums, an all airbag requirement would result in insurance savings of \$66 per year.

State Farm stated that while it does not now offer a discount to policy holders with automatic restraint equipped vehicles, the substantial financial benefits resulting from an automatic restraint requirement would be reflected in its rates, although it could not give a quantified estimate of that reduction. According to State Farm, its consistent policy in making insurance pricing decisions is to base them upon actual observed on-the-road insurance experience. State Farm also stated that, while that practice remains its policy, in other cases it has responded to competitive pressures where discounts have been made available, and it expects that the same thing would occur in this instance. Several other companies also emphasized that premium reductions would result as fatalities and injuries are reduced by automatic restraints. Emphasizing the relationship between premium and loss experience, Nationwide noted that since August 1981, it has lowered auto insurance rates in 19 jurisdictions, despite continuing inflation. Insurance Superintendent Corcoran states that he would mandate reductions in New York to assure that savings to insurers are reflected in premium rate changes to the public and assumes that all other regulators would do the same. Since his comments were submitted, New York has enacted legislation authorizing the Superintendent to require such premium reductions.

Not all commenters were certain that insurance costs would be reduced. Dr. Barbara Richardson, of the University of Michigan, stated that estimates of insurance premium changes

resulting from airbags range from a large decrease over the lifetime of a vehicle to a net increase in insurance cost. In addition, one insurance company, the Automobile Club of Michigan, expressed concern that the PRIA's estimates of additional insurance costs for airbags, based on replacement frequencies and costs, were substantially understated. The Automobile Club and the General Motors Acceptance Corporation (GMAC) argued that the agency forgot to include increases in insurance premiums to reflect the greater value of cars equipped with airbags.

The commenting insurance companies, including State Farm, also indicated that insurance premium reductions would occur in states that enacted safety belt usage laws, to the extent that real world experience justified such reductions. The American Automobile Association (AAA) of Michigan said it would lower personal injury premiums by 20 percent upon enactment of a seatbelt use law. Commenters indicated that some companies now offer an incentive of increased benefits at no additional cost if manual belts are worn. Commenters pointed out difficulties in implementing a discount program for seat belt usage, since verification of such usage, both generally and in the case of specific accidents, is not easy to obtain.

In response to the SNPRM, State Farm referred to the discounts offered for 5 mph bumpers as an example of the industry's quick reaction to reduce rates when, new safety features are introduced. Citing the D.C. Circuit's decision in *State Farm v. DOT*, State Farm argued that insurance companies practices have no significance for the decision that DOT has to make. It argued that if this concern were relevant, insurers have already given premium discounts for automatic restraint cars. It further argued that the issue of premium reductions is irrelevant to the conclusion that an automatic restraint rule will be cost-beneficial. It said this is so "because a proper cost-benefit analysis weighs the costs and benefits of a

standard to society as a whole. That balance cannot be determined from an analysis of the insurance effects of a rule, since there are enormous societal losses that go uncompensated under any insurance coverage." Finally, State Farm argued that DOT has a statutory obligation to require implementation of new technology where necessary to further the Safety Act and that consideration is different from the actuarial considerations that determine whether an insurance company will offer a premium discount.

The American Insurance Association (AIA) said that the industry has previously addressed the issue of insurance reductions. AIA pointed out that many of its members currently offer a 30 percent premium discount for medical payment and/or no-fault coverage for automatic restraint equipped vehicles. It referred to Nationwide's estimate of a potential annual premium savings per insured car that would equal \$31.00 if all cars had airbags. AIA also noted that Nationwide and United Services Automobile Association (USAA) currently provide incentives for wearing manual belts.

Nationwide criticized the agency for allegedly ignoring Nationwide's previous testimony on insurance premium reductions. Nationwide said that for the past 10 years, it has provided a 30 percent discount for first-party injury coverages for cars equipped with airbags. It further noted that, in its DOT testimony in 1976, it submitted its estimate of premium savings and its methodology for deriving that estimate. Nationwide updated that estimate to 1982, and said the potential insurance saving per policy holder is \$31 annually. That estimate is for a full front seat airbag system; Nationwide said that it is currently studying what discount it would give to a driver-side only system. It expects to offer a 25 percent discount on first-party medical coverage.

Nationwide also pointed out that, since 1963, it has offered extra medical insurance coverage, at no cost, to policyholders wearing their safety belts; last year it began providing a

\$10,000 death benefit and doubled medical payments coverage at no extra cost to policyholders wearing belts.

Allstate said that since 1974 it has had a 30 percent discount on first-party injury coverages for airbag equipped cars. It said that if airbags were installed in the entire fleet, there would be a 30 percent reduction in all insurance premiums, including medical payments, no-fault personal injury protection, death benefits, uninsured motorist coverage and bodily injury liability protection. Allstate said it could not provide an estimate of the insurance cost savings for automatic belts.

NAII pointed to prior testimony by USAA and Allstate providing details of insurance savings and observed that Nationwide specifically responded to the Secretary's questions at the public hearing concerning savings. NAII provided an attachment summarizing the prior industry testimony on the insurance savings issue.

NAII criticized the SNPRM's suggestion that insurers are not providing incentives for belt use. It cited Nationwide's policy and Leon Robertson's study that found that insurance incentives have not increased belt use. It also cited a 1980 National Academy of Sciences report done for DOT which questioned whether insurance incentives would be effective.

The Kemper Group said it currently offers a discount of up to 30 percent on first-party medical payment and no-fault auto insurance rates for cars with automatic belts or airbags. Kemper said that the cost of replacing an airbag could raise the physical damage insurance cost, but the increase would be minimal compared to the costs of the deaths and injuries that could be avoided with airbags.

Aetna estimated that the reduction in first-party no-fault, medical payments and uninsured motorist coverage premiums would be 25 to 30 percent for airbag equipped cars. As the percentage of automatic restraint equipped cars increases in the fleet, Aetna said there could be a similar reduction in third-party bodily injury premiums.

Conversely, Mercedes said "no company to our knowledge has reduced its rates on Mercedes-Benz Supplementary Restraint System (SRS) equipped vehicles" and Volkswagen stated that, to their knowledge, "no major insurance company offers a discount to owners of automatic restraint equipped vehicles," despite the fact that VW has been approached by insurers ostensibly for that purpose. VW said it has provided information to insurance companies because it desires to see its customers who have purchased automatic belt equipped Rabbits rewarded through lower insurance premiums.

Other Issues

Product Liability. The Automotive Service Council of Michigan raised the issue of the potential liability of independent repair shops that would service automatic restraint equipped vehicles. In addition, individual new car dealers and NADA raised the issue of whether the use of automatic restraints will increase a dealer's product liability costs. William C. Turnbull, President of NADA, testified that:

The reliability of passive restraint systems, particularly airbags, has been a matter of grave concern to dealers and consumers alike. No mass-produced product can ever be "failsafe." Components deteriorate due to passage of time, usage and climate. There are reports of inadvertent airbag deployments in the past. We fear that, with any widespread usage of airbags, incidences of inadvertent deployments and system failure will occur, with perhaps tragic consequences to vehicle occupants. In such cases, dealers may be the innocent victims of product liability lawsuits.

However, Willi Reidalbach of Mercedes-Benz, which is currently marketing an airbag-equipped car in Europe and the U.S., testified that he was not aware of any product liability concerns expressed by Mercedes dealers about the airbag system.

Several insurers provided comments on the potential of automatic restraints to reduce product liability claims and the availability and cost of manufacturer product liability insurance. Mr. Donald Schaffer, Senior Vice President, Secretary, and General Counsel of Allstate, testified that:

Our product liability people believe that the airbag equipped cars, if you insure the total vehicle, will produce better experience than the non airbag cars because the airbag reliability factors are much higher than anything on the car. They are much higher than the brake failure rates or anything else.

Mr. Schaffer also testified that at the time of Secretary Coleman's proposed demonstration program, Allstate was Ford's product liability insurer and had informed Ford that there would be no increase in its product liability insurance costs if Ford built an airbag fleet. He also testified that Allstate entered into a written agreement with General Motors that "we would write all of their product liability insurance for cars in the Coleman demonstration fleet at the same price they were getting from their regular product liability insurer per unit for non-airbag cars of the same make and model year."

NAII also addressed the product liability concerns raised by manufacturers and dealers. NAII said that:

The potential for product liability suits is always present for any manufacturer or seller of consumer goods. That threat is present at the current time for anyone in the distribution chain. We in the insurance industry expect that savings (not increased costs) would accrue to manufacturers and dealers, as a result of automatic crash protection systems being installed in all cars, as lives are saved and injuries are reduced, thus reducing potential litigation over safety deficiencies.

Another potential source of manufacturer liability was raised by Stephen Teret, representing the National Association for Public Health Policy. Teret argued that:

If a reasonable means of protection is being denied to the motoring public, that denial should lead to liability, even if the liability can be imposed on each and every car manufacturer. People whose crash injury would have been averted had the car been equipped with an airbag can sue the car manufacturer to recover the dollar value of that injury.

Sodium Azide. The Institute of Scrap Iron and Steel (ISIS) and the Automotive Dismantlers and Recyclers Association (ADRA) said that they were concerned about potential health hazards posed to their employees by sodium azide contained in airbag systems. Both ISIS and ADRA noted that sodium azide is toxic and a mutagen and that there is a general correlation between mutagenicity and carcinogenicity. In addition, they raised the issue of possible air canister explosions during the recycling and scrapping process.

To reduce potential hazards they recommended a number of actions:

- (1) Place a warning on the vehicles with airbags so their employees can easily identify them.
- (2) Design airbag systems so that they can be deployed by remote control or so that they can be easily removed from a vehicle.
- (3) Provide financial incentives, such as a bounty or fee, for removing the airbag canister.

Breed System. The Breed Corporation estimates the cost to the consumer of a Breed airbag system for the driver and one passenger to be \$140 installed, based on an initial production rate of one million units annually. Breed states that its cost estimates have been independently verified by technical experts familiar with auto industry practices, procedures and pricing mechanisms. Breed says that the system still requires a "good" year of research before it can be put into production.

Ford and GM expressed doubts about the readiness and performance of the Breed System.

Breed urged DOT to require car makers to design airbag cavities in steering wheels and dashboards to facilitate the retrofiting of cars with airbags.

Automatic Belt Detachability. Virtually all commenters who addressed the issue of detachability expressed concerns that nondetachable belts should not be required. The vehicle manufacturers generally agreed that the public, especially the hard core belt nonusers, would react adversely to nondetachable automatic belts. They also doubted that the difference in the long run usage rates for detachable belts and for nondetachable belts would be significant.

GM suggested that its experience with the 1980 Chevette shows that the public will not accept nondetachable belts. According to GM, general annoyance and fear of entrapment will lead many hard core nonusers to defeat that type of belt. As to detachable automatic belts, GM says that the inertia effect cited in the *State Farm* decision can be expected to operate only until the belts are first detached. While there would be an initial increase in usage, in the long run neither detachable nor nondetachable automatic belts would yield any increase in usage. Ford agreed that fear of entrapment would produce some adverse reaction to nondetachable automatic belts. Ford stated that detachable automatic belts would produce some undefinable amount of usage increase. While nondetachable belts would produce higher increases in the short run, in the long run the usage rate for nondetachable belts would fall to the level of the usage of detachable belts. Honda commented that nondetachable belts would not be accepted by the public because of entry and exit problems, entrapment fears and poor appearance. Nissan anticipated no difference in the long-run usage rates of detachable and nondetachable belts. VW said that the high usage rate of their automatic belt is due largely to the interlock. Without the interlock, VW said, the usage rate would be between that for manual belts and the current VW Rabbit automatic belt system. VW suggested also that it was important in designing an automatic belt to locate

the release mechanism near the window so that persons assisting an injured occupant could release the belt. ASBC predicted that 10-20 percent of car occupants are hard-core nonusers who will cut out nondetachable belts. The Council said that, in the long run, usage of detachable belts would fall between current manual belt usage rates and the rates for automatic belts in cars on the road today, i.e., usage would be about 50 percent. IIHS submitted a survey indicating that 68 percent would never detach a detachable belt, 21 percent would occasionally and 8 percent would do so permanently. John Graham stated that his survey of experts indicated that detachable automatic belts would increase usage by 10 percentage points and that 55 percent of motorists would dismantle nondetachable belts.

Alternatives

Retain

Most of the manufacturers indicated that they would comply by installing detachable automatic belts, since those belts would facilitate emergency escape from a vehicle after a crash and would face the least consumer resistance due to their lower price (compared to airbags) and the fact that they can be detached by occupants who do not choose to use safety belts for whatever reason.

Several insurance companies argued that the agency is required by law, based on the record, to implement some form of an automatic restraint requirement. According to State Farm, the effect of the Supreme Court's decision in *State Farm* is to require the Department to go forward with an automatic restraint requirement unless it has a rational basis for concluding that effective automatic restraint technology is not within reach of the car manufacturers. That company argued that the record amply demonstrates the existence of such technology.

Allstate argued that the record demonstrates that cost beneficial technology exists which, when included in all new cars, could save up to 10,000 lives each year and prevent more than 100,000 serious injuries annually. Allstate also argued that under the decisions of the United States Court of Appeals and the United States Supreme Court in the *State Farm* case, the Department lacks authority to look beyond that fact. That company stated that in its view, all proposed options that do not include the implementation of some form of automatic restraint requirement must, under the law, be rejected.

Similarly, NAII urged that the case for automatic protection has been fully documented. According to NAII, further delays for studies, demonstrations and so on are totally unwarranted and would only result in many more needless deaths and injuries. Such delays would also be inconsistent with the mandate of the Supreme Court.

Almost all commenting insurance companies favored implementation of the automatic restraint requirement as soon as possible. These commenters generally argued that the requirement is cost-beneficial and would save many thousands of lives and prevent tens of thousands of injuries annually. Several insurance companies stated that airbags offer the greatest possible safety benefits. However, the insurance companies generally urged that such issues as requiring compliance by means of airbags only or barring compliance with detachable automatic belts should be considered only after a general restraint requirement has been implemented. Allstate stated that the airbag-only requirement is preferable, but said that simple retention of the automatic restraint requirement is acceptable.

IIHS supported retention, noting as did various commenters associated with medical and health organizations, that public health measures depending for their success upon repeated cooperation of the intended individual beneficiaries, as would

mandatory belt use laws, have historically had limited effectiveness.

Insurance Superintendent Corcoran of New York State maintained that it has been clearly established that, for whatever reasons, people do not generally use their manual belts, and efforts to modify this behavior have been unsuccessful for the past 15 years. He believed that it is incumbent on DOT to mandate automatic restraints as the only means for increasing usage.

The manufacturers said that if automatic belts are less effective than manual belts, then persons who regularly use manual belts would end up paying more in the future for an inferior restraint system, raising fairness questions. Most of the companies indicated that, if the automatic restraint requirement were retained, they would use detachable automatic belts to comply, since those systems facilitate emergency escape from a vehicle after a crash and would face the least consumer resistance due to their lower price (compared to airbags) and the fact that they can be detached by occupants who do not choose to use safety belts for whatever reason. However, if such belts were left detached by most occupants, little safety benefit would be gained through their installation.

PLF and Consumer Alert and vehicle manufacturers argued that DOT should concentrate on educating the public about the value of manual belts in providing protection in the event of a crash. Once the public is convinced of the need to buckle up, fatalities and injuries will decline without having to mandate expensive new equipment in cars.

GM argued that implementation of the automatic restraint requirement would divert engineering resources away from the development of more publicly acceptable alternatives, such as the "built-in" safety of energy absorbing interiors. Increasing safety through the redesign of vehicle interiors instead of the installation of add-on devices like occupant

restraints would benefit unbelted as well as belted occupants at a cost far below that of airbags.

Amend

Airbag Only. Several health organizations argued that the agency should mandate airbags because that type of automatic restraint is the least intrusive for the occupant and because young drivers were the least likely to buckle manual belts and the most likely to try to defeat automatic belts. The Center for Auto Safety (CFAS) argued that small car occupants need the protection of airbags. The organization suggested that belts properly fit less than 50 percent of the population.

Many consumer groups and health organizations supported agency action that would mandate the installation of airbags in at least some new cars. To avoid the Congressional intervention that they thought might follow adoption of a requirement for nondetachable automatic belts, some consumer groups and health organizations urged adoption of either a requirement for airbags only or a requirement for airbags or nondetachable automatic belts.

The manufacturers objected to an airbag only requirement for several reasons. First, it was stated that an airbag is effective only in single impact, frontal crashes, and does not protect against occupant ejection from vehicles. The manufacturers view airbags as supplemental protection devices, to be used in conjunction with safety belts. The manufacturers also expressed concern as to the real world reliability of airbags, the difficulties in applying airbag technology to small cars, the effects of airbag inflation on out-of-position occupants (particularly small children), the potential adverse environmental impacts of using sodium azide as a propellant to inflate the airbag, and product liability impacts. The economic effects of an airbag only requirement were a major concern of the manufacturers. The additional cost of that restraint system was projected to raise vehicle prices significantly,

adversely affecting industry sales and thereby employment and profitability.

Some commenters, including MVMA, argued that adopting an automatic restraint requirement that specified the installation of a specific type of restraint, i.e., airbags, would violate the requirement of the Safety Act that safety standards be stated in terms of performance instead of design.

Congressman Dingall questioned the legal authority for an airbag only requirement in light of *Chadha*, which declared the legislative veto to be unconstitutional. The Congressman suggested that if the legislative veto provision were invalid, then because of the absence of any severability provision and because of the importance attached by Congress to the veto provision, the exception to the prohibition in the Vehicle Safety Act against non-belt standards must fall with the veto provision.

One public interest group (PLF) and one economist, Professor Lloyd Orr, argued that airbags would encourage motorists to drive less safely since they would be given more safety than they desire and would compensate accordingly. Their argument is based on the "risk compensation hypothesis," which states, for example, that given better brakes, a driver is likely to follow more closely, negating some of the benefits associated with the safer braking system. The IIHS and John Graham, another economist, presented data which contradicted the above hypothesis. Those data concern the behavior of drivers in Newfoundland which indicate that safety belt users were not any more likely than nonusers to make risky driving maneuvers. John Graham referred to papers he had authored, criticizing the concept of "risk compensation hypothesis."

Airbags and Nondetachable Automatic Seatbelts. Some consumer groups and health organizations argued that permitting readily detachable automatic belts would only encourage those consumers not already in the habit of wearing belts to detach the belts and would result in a minimal increase in

protection for car occupants. These groups urged therefore that the agency mandate that automatic belts not be easily detachable.

Some consumer groups and health organizations argued that automatic belts should be detachable to allow ready escape in emergency situations and to permit those confirmed nonusers of seatbelts (estimated by these groups at 10 to 20 percent of the population) to deactivate the belts for themselves by something other than permanent means, such as cutting the belts. These groups argued that nondetachable automatic belts would lead to Congressional action overturning the entire automatic restraint standard just as Congress had overturned the ignition interlock requirement in 1974. The car manufacturers opposed this option because it would limit their flexibility by requiring the installation of the most expensive and/or controversial types of automatic restraints. Manufacturers also argued that, given a choice, they would not produce nondetachable automatic belts because of anticipated adverse consumer reaction and difficulty in emergency egress with such systems.

Passive Interiors. GM stated that, since the original issuance of FMVSS No. 208, there have been significant advances in the state of the art of occupant protection. These advances have been made available in large part because of the increased use of advanced computer technology in the design and development of new vehicles. GM has implemented a Vehicle Safety Improvement Program which is aimed at increasing the "built-in" safety of its vehicles for restrained and unrestrained occupants.

GM said that the purpose of the "built-in" safety strategy is to maximize the reduction in total harm resulting from vehicle crashes. It argued that "no promising technology should be excluded simply because it either cannot meet arbitrary laboratory requirements or can only meet them on selected types of vehicle. Nor should new and promising technologies be

discouraged because they are not envisioned in a regulatory scheme." GM urged that implementation of FMVSS No. 208 would "impede, or at least greatly dilute the efforts that are needed to increase the state-of-the-art of other promising occupant protection technology."

In its comments on the SNPRM, GM suggested that DOT consider a more flexible approach to reducing deaths and injuries. They propose a three-step approach consisting of:

- (1) Retain the current requirements of FMVSS 208, but give manufacturers the option of meeting it with manual belts;

- (2) If a manufacturer chooses to comply with Standard 208 using manual belts, test the vehicle as follows:

- (a) Fastened manual belts must satisfy the same dynamic criteria as airbags or automatic belts; and

- (b) The vehicle would be subjected to a 25 mph barrier crash with unfastened manual belts. The same injury criteria would be used to evaluate acceptable performance in this test as is used in the 30 mph test above; and

- (3) Approve various changes in the Standard 208 test procedures, most notably using the Hybrid III dummy, instead of the Hybrid II.

GM stated that this option would offer protection to all unbelted front seat occupants, not just the 5% of current nonusers who would use automatic belts. GM estimated that this step would yield a 12% reduction in fatalities and serious injuries, which is equivalent to maintaining 36 percent manual belt usage.

Small Cars. Several car manufacturers expressed concern about the difficulty of applying airbag technology to small cars. The shorter "crush space" between the fronts of small cars and the passenger compartments of those cars means that small cars decelerate faster in a frontal crash, leaving less time for an airbag system to sense the crash and inflate the airbag.

The limited time means that the airbags must inflate more rapidly than in a large car, raising concerns as to airbag induced injuries, particularly to out-of-position occupants. GM expressed the view that the faster airbag inflation rate needed for small cars, in conjunction with the thicker airbag needed to decelerate the faster moving occupants of a small car, could cause fatal lesions in out-of-position occupants.

Honda expressed the view that airbags provide inferior protection as compared to manual belts in small cars at crash speeds above 30 miles per hour. Attempts to improve airbag performance in small cars through the use of a knee bolster were not particularly successful, since the resulting limited available space in such cars made entry inconvenient and the weight of the knee bar adversely affected fuel economy.

IIHS noted that two studies compared the effectiveness of airbags and manual lap/shoulder belts in small cars. One study, using Ford Pintos, showed that airbags performed slightly better than belts. The other study, using Renault R-12's, showed that the two types of restraints performed approximately the same, according to IIHS.

GM agreed that small cars needed the highest priority, but argued that the rapid inflation rate required to meet a 30 mph test poses an unacceptable risk to out-of-position occupants.

State Farm said that the analysis by Professor William Nordhaus of Yale University showed that it is significantly more cost-beneficial to require installation of automatic restraints in both outboard seating positions and to require automatic protection for all size cars.

NADA restated its general opposition to any mandated automatic restraint and said that it was specifically opposed to a driver airbag-only option for small cars. NADA said that such a standard would be a design standard in violation of the Vehicle Safety Act and current airbag technology is not adequate for small cars.

Ford estimated that the cost of a driver-side airbag system would be about \$600, which represents a large cost increase for vehicles at the lower end of the price range. Ford also questions the effectiveness of airbags in any size vehicle, the public acceptability of airbags, and the authority of the agency to issue an airbag only standard.

VW also opposed driver-side airbags for small cars, saying that the technology is not proven for those vehicles and the Department should set performance and not design standards.

AMC supported the concept of requiring driver side only automatic restraints. AMC, however, said that airbags should not only be required on small cars since it "was not aware of any technical information that suggests that restraint requirements are fundamentally variable as a function of car size."

Nissan argued that requiring airbags for small cars is unfair to purchasers of those cars "because people buy small cars for economic reasons and the small car buyer should not be singled out to pay for expensive devices." Nissan also argued that if drivers assume that the airbag provides sufficient protection, then they might stop wearing their manual belts which are needed for protection in rollover and other accidents.

Toyota restated its general opposition to mandated automatic restraints and its specific opposition to a design (airbag) standard rather than a performance standard. It further argued that airbag technology has not been developed for small cars.

Allstate said that automatic protection should not be limited to small cars, but should be available on all cars.

The American Safety Belt Council (ASBC) said that a lap belt should also be required for a driver-only airbag. It recommended that for the right front passenger position, an automatic belt should be required.

Honda said that more development time is needed and that the added cost of airbags will substantially increase the cost of small cars.

Renault said airbag technology for small cars has not advanced far enough. It recommended waiting for the results of the Breed research program.

Jack Martens recommended that all cars with a wheelbase of less than 101 inches be equipped with airbags and with either manual or automatic belts for all front seat positions. Cars greater than 101 inches would be equipped with either nondetachable automatic lap and shoulder belts or airbags.

Public Citizen argued that if drivers of small cars can readily be protected then it is even more unreasonable not to protect the passenger in small cars and drivers and passengers in all cars.

IIHS supported mandating driver-side airbags in all cars, if it would lead to full front airbags.

Center Seating Position. Ford suggested that six-seat cars would probably no longer be produced if the center front seating position were required to be equipped with an automatic restraint. There is no known practical design for an automatic belt system that could be used for a three-position front seat. Hence, the only known automatic restraint system that could be used for the center position would be an airbag. Citing its concern about the hazards it believes would be posed by airbags to an out-of-position occupant, Ford indicated that it would probably choose to eliminate the front center seating position. The American Automobile Association (AAA), Chrysler, AMC and Consumers Union agreed that the center position should be excluded, noting that the agency's 1982 data show that 98.1 percent of front seat fatalities occur to persons sitting either in the driver's seat or in the passenger's seat next to the right door.

One commenter strongly urged that the front center seating position not be excluded from the automatic protection

requirements since young children are the most frequent occupants of this position and thus would be the ones who would suffer the most from the absence of automatic protection.

Rescind

Those commenters who favored rescission opposed adoption of the other alternatives and vice versa. Since this section of the preamble discusses each alternative separately, the views of commenters who favored one alternative are not necessarily included as negative comments to the other alternatives.

Generally, rescission was favored by all automobile manufacturers and by all new car dealers. Insurance companies and health associations all favored some form of retention and thus opposed the rescission alternative.

Most of the individual commenters opposed automatic restraints, especially airbags, on the basis of excessive government interference, high cost, and fear about the failure of airbags to operate properly. A very substantial number of these commenters were GM stockholders or employees.

Automobile manufacturers favored the standard's rescission on several grounds: that it was not as effective or cost-effective as mandatory belt use laws, that it unnecessarily would add to vehicle costs without commensurate benefits and that the technologies available for compliance would be rejected by the public as being too costly or intrusive.

For instance, Ford said that it could not support mandatory passive restraints by either amending or reinstating FMVSS 208 because of serious questions on restraint effectiveness and consumer acceptance.

GM said that detachable automatic belts are unlikely to increase belt usage and nondetachable belts would be rejected by the public. Because of technical concerns regarding airbags, particularly for out-of-position occupants in small cars, and because reinstatement would divert engineering

resources from the development of passive interiors, GM believes the automatic occupant protection requirements should be rescinded.

The Automobile Importers of America (AIA) favored the adoption of mandatory use laws and said that questions of consumer acceptance, particularly regarding airbag technology and consumers' fear of entrapment, still need to be addressed.

BMW said that the passive restraint issue should be "decided in the free market" and not by regulation.

One airbag supplier, Breed, recommended that the agency retain the current manufacturer option of installing either manual or automatic restraints. The commenter believed that this approach would impose minimal costs on the car manufacturers. After this supplier's airbag has been proven in more field tests, it believed that many car manufacturers would elect to provide airbags as readily available options.

The automobile dealers urged rescission because they thought that car purchasers are unlikely to accept automatic restraints. NADA cited the VW and Toyota experience with automatic belts and GM's experience with automatic belts and airbags as support for this contention. NADA also said automatic restraints would have an adverse impact on sales.

Most insurance companies and most consumer, medical and safety organizations opposed rescission or suspension, whether taken as a single action or in conjunction with a demonstration program or seeking legislation to mandate a consumer option, but organizations such as the Pacific Legal Foundation favored rescission. The PLF argued that the data did not support the Department's analysis of the effectiveness of automatic restraints.

State Farm said that a decision to rescind would be arbitrary and capricious. They referenced Professor Nordhaus' study as showing that rescission would impose enormous net costs on society. Nordhaus said that, for every year during which no

automatic protection is required, it will cost society \$2-2.5 billion. The American Association for Automotive Medicine said that "from a public health perspective, maximum protection requiring no action by the occupant is obviously preferable and desirable."

Congressman John Dingell argued that as long as the Department applied a reasoned analysis, rescission is possible and the best course to follow. Congressman Timothy Wirth contended that the statute requires that DOT move forward as promptly and expeditiously as possible to the implementation of meaningful automatic crash protection.

Joan Claybrook, of Public Citizen, said that there is more information on the benefits of automatic restraints than on any standard ever issued by NHTSA. Consumers Union "strongly" urged DOT "to promulgate promptly" FMVSS 208.

Demonstration Program

Ford argued that the effectiveness of automatic restraints could be determined only after a large-scale demonstration program is conducted. It proposed a program for the installation of automatic restraints in five percent of the new car fleet over a four-year period. The comments of several other manufacturers suggested that they would not oppose a demonstration program.

Ford said that the SNPRM misstated its proposed demonstration program requirement as at least five percent of each manufacturer's annual production for four years. Ford corrects this to mean an average of five percent of annual production manufactured for sale in the U.S. over a period of four years. Ford continues to believe that its proposal is the most effective means to resolve the stalemate on how best to improve occupant protection.

In response to the SNPRM, AMC said that a demonstration/test program similar to Ford's proposal is absolutely necessary prior to any effective date for requirement of automatic restraints. In the interim, the automatic restraint requirements should be suspended and a rule drafted so that rescission would occur if the findings of the test program were negative. AMC supports a demonstration program, but it does not feel that a mandatory program should necessarily be imposed on all low-volume car manufacturers. In some cases, the minimum added information to be gained would be more than overshadowed by excessive resultant cost. A five percent program for a two-to four-year test period would be acceptable, utilizing various automatic restraint systems for the driver only. AMC could launch such a program between early 1987 and fall 1987.

VW endorses a demonstration program and proposes an alternative plan, which would give credit to manufacturers that have already produced large numbers of automatic restraint cars. VW also said that any demonstration program should permit automatic belts to continue to be permitted. VW said that DOT should take into account the fact that costs will be higher for smaller manufacturers and that DOT has proposed no mechanism to "guarantee" that the public will buy automatic restraints.

Chrysler prefers mandatory seat belt use laws. If there is a demonstration program, companies would need adequate time to evaluate test results regarding airbag performance and public acceptability. Chrysler will cooperate in such a program, with up to 5 percent of its production for MY 1987 and 1988, provided that it applies to all domestic and foreign manufacturers. Chrysler believes there should be an automatic restraint for the driver only and that the program should only require a manufacturer's "best effort" to sell five percent of its total production, all on one car line, with appropriate pricing to validate public acceptance.

Volvo said the idea has some merit, but any airbag system should be for the driver only. The five percent figure should apply to total vehicle sales, not to a percentage of each car line.

Renault said that the program would produce concrete evidence in an uncertain area and that it should apply to foreign manufacturers selling more than one million vehicles per year in the U.S.

Honda said the program should be voluntary and include ways to encourage use of manual belts. Honda believes there are R & D problems that must be solved prior to an automatic restraint mandate. Honda opposes the requirement of two kinds of tooling on production lines and views the five percent requirement as unreasonable, regardless of demand.

Lotus said that since it imports only 300 cars into the U.S., at five percent, there would be 15 Lotus autos involved. It suggests an exemption for manufacturers selling less than 10,000 cars per year in the U.S. It points out that this is the small manufacturer definition used by EPA, and that DOT has overlooked the impact of this proposal on small entities, including manufacturers and dealers.

BMW would not be adverse to the program, if the manufacturer has a choice of driver-only systems, a choice of restraint type and vehicle models, and the initiation of the program was not earlier than September 1986.

Mazda suggested that DOT limit the program to high-volume production vehicles and to models produced in volumes exceeding 200,000 units per year. This will permit recovery of investment and development costs.

Peugeot said that the demonstration program is the best approach. Peugeot believes that conclusions can be drawn four years after implementation and that the program must take into account both manual and automatic restraints. The

only disadvantages of the demonstration program are economic, but this can be alleviated by letting the manufacturer choose 5 percent of each model, or 5 percent of one model.

The American Seat Belt Council said that the program should be used only for airbags to determine market suitability. Any automatic belt system should be permitted to be detachable.

The Pacific Legal Foundation (PLF) said that if DOT is to proceed with the automatic occupant protection issue, it should use the demonstration program to acquire a data base.

General Motors (GM) said that a mandatory automatic restraint demonstration program does not answer the basic question of whether the public will accept or use automatic belts or accept the higher cost of airbags.

AMC said in response to the NPRM that it was inappropriate to require a small company like AMC to participate in a demonstration program.

Toyota was generally opposed to a demonstration program. However, if one were undertaken, the DOT program should: (1) Contain performance, not design, requirements; (2) permit the manufacturer to select the car lines to be affected; and (3) have the same requirements for all manufacturers, small and large.

Nissan said that the problem with the program is that sales projections of any percentage are impossible to forecast. Only customer preference can dictate the numbers sold. But if the program is mandated, then: (1) Nissan would need 30 months leadtime; (2) it should permit either automatic or 3-point belts; (3) let the manufacturers decide the type of restraint on any model; and (4) it agrees with Ford on amending the test injury criteria.

NADA said that automatic restraints have not been proven to be more effective than manual belts and that a demonstration program was a counter-productive idea due to delays in

implementation (21 to 42 months) and assessments (6 to 8 years), which would divert manufacturer resources. It would also have an adverse effect on franchised dealers, who would have to attempt to sell the automatic restraint equipped cars.

IIHS opposed the program because it does not meet the statutory responsibility of DOT. There would be no economies of scale; therefore, higher costs could result. However, if it were done very quickly, the program could be a useful supplement to this rulemaking. IIHS reiterated its belief that a mandatory automatic restraint standard was needed as soon as possible.

Allstate said that a demonstration program could delay the safety needs of the public for 7 years, 4 for the demonstration, and 3 for the lead-time to equip the rest of fleet.

State Farm said such an alternative was unlawful, irrational, arbitrary, and capricious. Adoption of the Ford proposal would impose a costly, harmful, and unjustified delay.

The National Association of Independent Insurers (NAII) opposed the program as a form of delay.

The Center for Auto Safety (CFAS) said the demonstration is outside the limit of DOT's statutory authority, as illustrated by former Secretaries Volpe's and Brinegar's requests to the Congress for explicit authority for a standard's phase-in based on percentage of production. The CFAS said that NHTSA has recognized that percentage phase-in is of questionable legality, citing the DOT brief in *PLF v. Adams*, 593 F.2d 1338 (D.C. Cir. 1979).

Public Citizen said that a demonstration was not authorized by the Act.

The Breed Corporation said that a mandatory demonstration program, since it would result in a safety standard which did not apply to all motor vehicles of a particular type, would be unlawful.

Mandatory Belt Use Laws

General. Almost all car manufacturers supported belt use laws in lieu of some form of automatic restraint requirement. They stated that these laws would be the most effective and least costly approach. The automobile dealers also supported these laws. Most individuals who oppose automatic restraints and supported an alternative named belt use laws as that alternative.

The American Seat Belt Council said that belt laws would be the most effective approach, but expressed the belief that some sort of financial incentive would be necessary to get individual states to consider passage of such laws. Congressman Dingell supported belt use laws and noted his bill to encourage state enactment of them.

Many vehicle manufacturers and other commenters noted that belt usage laws would begin producing benefits over the entire fleet of cars on the road as soon as the laws became effective. By contrast, they noted, the benefits associated with automatic protection would accrue only as new vehicles equipped with automatic protection were added to the fleet of vehicles in use. It would take at least ten years for cars equipped with that type of protection to fully replace nonautomatic cars. Because of this factor, many commenters suggested that the agency mandate automatic restraints, to provide that protection to occupants of new cars, and seek belt usage laws, to provide increased protection to occupants of older cars.

The Motor Vehicle Manufacturers Association (MVMA) and several individual manufacturers stated that the minimum criteria specified in the SNPRM for belt usage laws deny state legislatures the flexibility to design belt use laws consistent with the demographics, motor vehicle statutes, and law enforcement practices of the individual states. These commenters suggested that rather than DOT specifying the means which must be used to achieve the goal of increased belt

usage, it should simply specify the desired end (in terms of the percentage of front seat occupants wearing their belts) and allow the state legislatures to select the most effective means to that end for their particular state.

Several insurance companies opposed safety belt use laws as a substitute for the automatic restraint requirement because all front seat occupants of a car equipped with automatic restraints would be protected while a belt use law would protect only those front seat occupants who complied with it. The insurance companies, Congressman Wirth, and Public Citizen argued also that safety belt use laws were not an alternative that would satisfy the Safety Act or the *State Farm* decision. However, the insurance industry generally favored these laws as a supplement to an automatic restraint requirement.

Although virtually all medical and health organizations opposed substituting safety belt use laws for the automatic restraint requirement, they noted that recent experience in Canada and Great Britain has shown that introduction of these laws produced sizable reductions in injuries and deaths.

Both the Insurance Institute for Highway Safety (IIHS) and the Pacific Legal Foundation (PLF) submitted studies indicating that while belt use laws do increase usage, the resulting reductions in deaths and injuries are proportionately smaller than increases in usage. These studies led both groups to conclude tentatively that the population with the greatest likelihood of being in vehicle accidents is also the least likely to comply with belt use laws. A similar point was made by New York Insurance Superintendent Corcoran. Hence, both groups urged DOT not to overstate the benefits that would result from belt use laws. Ralph Nader opposed safety belt use laws as an alternative because of his belief that such laws would not be adopted by the states and would not be complied with by those who most need to buckle up.

As to the question of the likelihood of enactment of state safety belt use laws, IIHS said that the closest analogy was not the child restraint use laws or the recent wave of more stringent drunk driving laws, but the motorcycle helmet use laws that have been repealed or weakened in a significant number of states.

Several commenters including the National Association of Governors' Highway Safety Representatives (NAGHSR) stated that the DOT approach was fundamentally wrong in that it sets automatic restraints and belt usage laws as an either/or proposition. These commenters argued that both of these requirements are needed to ensure maximum use of restraints by front seat passengers. Further, these commenters asked why the Federal government was intruding on the states' prerogative to shape the usage laws by specifying minimum criteria.

The Governor of Wyoming stated that there was little or no chance of ever passing a belt usage law in that state, and recited a list of enforcement problems which would be posed for that state if it were to pass a belt usage law.

The insurance companies generally argued that DOT's options of pursuing belt usage laws were illegal as an abdication of DOT's statutory responsibilities. The proposals in the SNPRM, it was argued, would result in a lack of uniformity nationwide. As a practical matter, these commenters believed that either of the options which would eliminate the requirement for automatic restraints if states passed belt usage laws would encourage manufacturers to develop the cheapest automatic restraints which would satisfy the standard, since it was possible that the manufacturers would never be required to put these restraints in their vehicles and they would thus wish to minimize any investment losses. It was also stated that these systems would be the least effective automatic restraints. The insurance companies noted the serious enforcement problems which belt usage laws would impose on the states. IIHS stated

that there is no evidence anywhere to this record to support the claims that belt usage laws would be obeyed without vigorous enforcement, and such enforcement would be a headache for the states. Their researchers found that in New York, where an administrative regulation requires holders of learner's permits to wear their belts while driving, thirty-nine percent, thirty-two percent, and six percent of drivers with learner's permits actually wore their belts at three different locations. Further, IIHS noted that, as of the time of their docket submission, no state had yet passed a belt usage law and such laws were being considered in only 11 states.

Volvo responded to the claim that belt usage laws would not protect those who are most likely to be in accidents, and that therefore belt use laws will not achieve the reductions in deaths and injuries which would accompany a particular level of belt use. Volvo argued that these drivers would also be the most likely to defeat any automatic belts, and so would not be protected by those restraints, and the most likely to be in rollover crashes, in which they would not be protected by airbags.

SNPRM Alternative: No Automatic Restraints Required In A State That Passes An MUL The manufacturers generally opposed this alternative on the grounds that it would create major distribution problems, it would create serious enforcement problems for the states (for instance, will residents of a state be permitted to cross the border to purchase a car equipped with the restraint system they want?), and it would force the manufacturers to produce two different types of otherwise identical vehicles.

The State of Washington asked why DOT would waive an automatic restraint requirement, and stated that it believed the existence of automatic restraints would be as much of an incentive to pass a mandatory belt use law as would a waiver. Similarly, NAGHSR stated that the waiver would be an administrative nightmare for the states, and that this waiver

would make it difficult for a consumer to purchase a car with automatic restraints if the state has a mandatory use law.

NADA stated that this alternative would create uncertainty and a patchwork pattern of automatic restraint requirements, which would cripple product planning, pricing, advertising, and distribution.

A Michigan legislator and the Michigan Secretary of State supported this proposal, saying the most effective protection available to front seat occupants is the manual belt already in the vehicle.

SNPRM Alternative: Automatic Restraints Required Unless 75 Percent of States Pass Mandatory Belt Use Laws by a Certain Date. The manufacturers strongly objected to this alternative, since they would be forced to immediately begin investing time and money on a device which might never be needed. They said that this alternative would raise car prices even if the automatic restraints were never required. The manufacturers also stated that the progress reports were an unnecessary burden, since a manufacturer that was not prepared to install automatic restraints when those were required would be completely forced out of the market until such time as it could install automatic restraints. That is incentive enough to ensure that the manufacturers will be ready to install those restraints.

Ford would change this alternative to suspend FMVSS 208 while a good faith effort is made to pass mandatory use laws, and, if this is unsuccessful, specify an effective date for FMVSS 208. Volkswagen (VW) suggests setting an effective date on a sliding scale after seeing if enough states pass mandatory use laws. For instance, if ten percent of the states have not passed mandatory use laws in two years, Standard 208 would become effective three years after that date, if 25 percent had not passed mandatory use laws in 4 years, Standard 208 would become effective three years after that date, and so forth. American Motors Corporation (AMC) would

amend the alternative to specify no automatic restraints when seventy-five percent of the driving public is subject to mandatory use laws or when seventy-five percent are using the manual belts in their vehicles.

The National Automobile Dealers Association (NADA) stated that there is no basis for imposing automatic restraints, whether or not seventy-five percent of the states pass a mandatory belt use law.

The insurance companies wondered how DOT had decided that residents of twenty-five percent of the states could be left without enhanced occupant protection in their cars when the record was so clear on the need for enhanced protection. The National Association of Governor's Highway Safety Representatives (NAGHSR) stated that Federal intrusion was not needed to get states to pass mandatory use laws.

Two Michigan officials stated that the seventy-five percent figure should be lowered, since it was doubtful that it could be achieved, and argued that greater flexibility should be allowed to the states.

Test Procedures

Repeatability

Most automobile manufacturers raised several issues concerning the automatic occupant protection provisions of FMVSS 208. Statements were made that the test procedures, in general, fail to meet the "objective" criterion of the statute. Suggestions were also offered to change the procedures, the anthropomorphic test dummy, and the standard's injury prevention criteria.

Manufacturers stated that the test procedures do not produce repeatable results. Relying on data from the agency's New Car Assessment Program (NCAP) repeatability tests, the manufacturers argued that there is substantial, uncontrollable variability in the test results. As a result, they argue that the standard is not practicable.

NHTSA's New Car Assessment Program, which is an experimental program designed to develop consumer ratings of vehicle crashworthiness, is similar in test procedure to FMVSS 208 in that it uses instrumented Part 572 test dummies to ascertain potential injuries to human occupants in a frontal barrier crash. The program differs from FMVSS 208 in that its purpose is to rate cars. Therefore there is no minimum level of performance specified as in FMVSS 208, and the tests are conducted at 35 mph instead of the safety standard's specification of 30 mph.

In 1983, NHTSA conducted tests to determine the repeatability of test results from the NCAP. Twelve Chevrolet Citations were tested in three different laboratories (four in each laboratory) to help determine the magnitude of variability surrounding a single test result. GM supplemented the agency's program by crashing an additional four Citations at their own facilities.

In commenting on the October 1983 NPRM, American Motors (AMC) referenced the NCAP repeatability tests and stated that based on the high degree of variability in injury criteria test results, the FMVSS 208 test procedures were "unacceptable" and lacked the necessary objectivity required by a safety standard. To compensate for this large variability, AMC suggested the agency use a "design-to-conform" approach as a means of compliance.

Chrysler also stated its concern over test repeatability and variability, as evidenced in the NCAP program, and argued that testing airbags under the current test procedure could lead to even greater variability. Chrysler suggested testing airbags with a belt, exempting the front center seat from any passive requirements, eliminating the 30 degree oblique test and waiving all injury criteria.

Volkswagen (VW) referenced the NCAP repeatability program and concluded from its results that the current test procedures were "not appropriate", particularly for safety

belts. VW argued that the test procedures, and the dummy, were developed for testing compliance with airbags. It suggests that the procedures be revised to only use dynamic testing if a vehicle is equipped with airbags.

GM also spoke of excessive variability and stated that the test procedures must be improved. GM urged NHTSA to approve its petition to use the Hybrid III dummy as an alternative test device and to develop different compliance tests for different technological safety improvements.

Ford claimed that the test procedures are neither objective nor practicable and, based on the NCAP tests, manufacturers would have to "overdesign" their vehicles to ensure that all vehicles were in compliance. Ford stated that the procedures do not comply with the Court's ruling in the *Chrysler* case that test procedures must be capable of producing identical results when test conditions are exactly duplicated. Ford argued that repeatable results are impossible to achieve with the current FMVSS 208 test procedures. The company supplied results of early 1970's sled tests to show that variability was inherent in the test procedures and test dummy and was not solely related to vehicle-to-vehicle differences. Ford suggested that test variability could be compensated for by using a design to conform approach, eliminating the 30 degree oblique test, not dynamically testing automatic belts, changing the FMVSS 210 anchorage location requirements, and testing airbags with a belt.

MVMA emphasized their concern that the NPRM failed to address the issue of test repeatability. Its concern was based on the NCAP test results. MVMA urged the agency to publish a supplemental notice to address the issue.

Several commenters to the NPRM suggested that there was no reason to be concerned over test procedures or repeatability. Byron Bloch, an automotive safety consultant,

pointed out that cars are designed using crash tests and sophisticated dummies, and he supplied the text of a GM advertisement to that effect.

The Insurance Institute for Highway Safety (IIHS) reviewed the results of the NCAP repeatability test program and concluded that these tests "produced repeatable results when the correct procedures were adhered to * * *"

Allstate Insurance Company claimed that the current test procedures assure individual purchasers of automatic restraints of protection and that the agency should also test manual belts dynamically.

Because of the above, the issue of repeatability, as well as other test procedure concerns, was raised in the SNPRM. In the SNPRM, the Department stated that it believed that the Part 572 test dummy was not a major source of the variability found in the NCAP repeatability tests, that the proposed adoption of two of the NCAP procedures into FMVSS 208 would further reduce variability, and that additional changes in the test procedures to reduce variability were not necessary. Any remaining variability was assumed to be due largely to vehicle-to-vehicle differences, which are outside the control of the Department.

In commenting on the SNPRM, auto manufacturers took exception to the Department's conclusions.

Ford reiterated its prior arguments about repeatability and criticized the agency for not clearly setting out what are the proposed NCAP changes to the 208 standard. It characterized what it understood to be the revisions to the NCAP test procedures as minor, subjective and unverified. Ford said that the agency was still conducting its repeatability research study and questioned how the agency could conclude that the test dummy is not a major source of variability.

Ford further argued that the agency had not shown that the "test device and test procedure are separable in their influence on test results from the performance of the vehicle, so that any

variability in test results 'must be' attributable to vehicle-to-vehicle differences in manufacture or performance."

Ford also argued that overdesign should be used only to compensate for manufacturing variances, which can be estimated and controlled for by the manufacturer and that overdesign should not be required of manufacturers because of deficiencies in test procedures.

Ford concluded that the test procedures were "flawed," that variability was inherent in barrier crashes and was likely "irreducible," and that the current procedures, with their large associated test result variability, placed a manufacturer in "unacceptable jeopardy" in terms of assuring compliance with the standard.

The company also claimed that "comparable variability," to that observed in the NCAP Citation tests would be expected for other models. It based its conclusion on the coefficient of variation (COV) of 33 Mercury airbag sled tests, scaled at 35 mph, and seven Volvo barrier crash tests.

GM said that the driver HIC results of the NCAP repeatability tests, which incorporated the test procedure changes proposed in the SNPRM, already demonstrate that the range of variability is too large. GM argued that the amount of variability is not due to vehicle differences. It referred to a series of controlled sled tests it conducted, in which the coefficient of variation of the HIC data was as high as 11 percent for the driver and 8 percent for the passenger. For the NCAP series, the COV was 21 percent for the driver and 11 percent for the passenger. GM said that a comparison of the two data sets shows that the major portion of the variability is test-related, not vehicle-related.

GM argued that because of the variability, the amount of overdesign needed to provide a reasonable certainty of compliance would be impracticable. It said that the design level of HIC protection could not be justified in terms of a "minimum" safety requirement. GM said that it does "not believe

that a practicable dynamic test requirement can be devised to provide manufacturers with the assurance of 'certainty' specified by the *Paccar* court. The only solution may be the one suggested by that court: " * * * it must propose some alternative method for those manufacturers which, if followed, it will recognize as fulfilling the due care requirement.' "

Mazda commented that the NCAP repeatability study dealt with a compact size vehicle, which has more available crush space than a subcompact. It recommended that a similar repeatability study is necessary for subcompact vehicles. Mazda agreed with NHTSA that adoption of the NCAP test procedures would eliminate some of the existing variability, although further refinements are possible.

American Motors said that adopting the NCAP modified test procedures cannot be expected to reduce test variability since the modifications are minor. AMC said that there are other test variables, such as safety belt tension and actual dummy position just prior to impact, that have a similar effect on dummy positioning, but those variable are not controlled for in the test procedure.

AMC also claimed that because of the lack of repeatability in the FMVSS 208 test procedures, the standard does not meet the requested statutory criteria. AMC believes the above because the unreliability of test results demonstrated in the NCAP program are "indicative" that a similar level of variability will exist in FMVSS 208.

Peugeot stated that it "can but reluctantly accept as valid a test procedure" with a COV of 21 percent. It suggested that the level of performance (e.g., HIC criterion of 1000) be raised by the amount of variation.

Chrysler, based on the NCAP data, concluded that the test procedures are not capable of producing identical results when a given vehicle is repeatedly tested. They believe the current procedures only measure a manufacturer's ability to conduct the test and do not measure the adequacy of the restraint

system. Chrysler said that because differences in dummy foot placement and ambient temperature make a difference in test results, the test is not practicable. Chrysler also argued that the agency must develop a test which takes into account the inherent crash variability of the vehicle itself.

Volvo said that the modified NCAP procedures only address a portion of the variability and that it has not been demonstrated that the new positioning requirements will in fact result in a repeatable positioning of the test dummy. It noted that the procedures do not ensure that the same webbing location is used in each test. Volvo also said that because of the effect of temperature on dummy performance, either the permitted range for crash testing must be narrowed or new materials be used in dummy construction. Volvo also said the NCAP repeatability program shows that there is a certain amount of unreliability in the signals obtained from the accelerometers and that different laboratories have used different methods to process crash data.

Volvo also supplied the results of 10 sled tests in which there was a stable crash pulse and no contact between the dummy's head and vehicle interior, thus eliminating most vehicle-to-vehicle parameters. The mean HIC was 466.5 with a COV of 12.5 percent.

Nissan said that under the current test procedures, it is difficult to maintain the same relative positioning of the test dummy for several tests. It recommended that the agency maintain the same initial relative measurements between the dummy and steering wheel and instrument panel for each test of a particular model. It also said that the positioning of the seat belt should correlate to design measurements submitted to the agency by manufacturers. It urged changing the seat position requirement (it is currently set at the mid-position) since passengers in small cars tend to move the seat rearward. Nissan recommended that the measurement between the hip

point and ankle should be constant for the positioning of the seat.

Toyota said there are still unresolved problems concerning the variability in electronic crash data collection systems. It also recommended that the test procedure specify the "timing of dummy installation prior to crash * * *. Such timing will affect test results depending upon the extent of the breaking-in (sic) between the dummy's hip and the seat materials."

Mercedes said that the Part 572 dummy is not sufficiently repeatable for compliance test purposes, that the Hybrid III dummy provides no improvement in this regard and that adoption of the NCAP test procedures is a step in the right direction.

Volkswagen also contended that the variances resulting from the NCAP repeatability tests were too large for compliance test purposes of a safety standard. VW argued that overdesign to comply with FMVSS 208 has nothing to do with improved safety but only costs the company time, effort, and money in overcoming the inherent variability in the test itself.

Renault said that the current COV of 61 percent (which permits a variation of 65 percent) is too large; it said the COV should not exceed 10 percent. It said that as long as the COV remains at 21 percent, the HIC limit should be raised by 63 percent.

MVMA again reiterated its concern over test variance and said that FMVSS 208 is not objective.

IIHS said that overdesign is standard industry practice and current test data show that compliance is "easily achievable."

Allstate again contrasted the lack of any dynamic testing of seat belts with the detailed test procedures for testing of automatic restraints. It cited the *Public Citizen v. Steed* decision on tire treadware grading (UTQGS) for the proposition that "no test procedures * * * are going to approach perfection." Allstate said that it seemed "strange" for the

Department to be concerned over "minute details" of test procedures and to refuse to implement FMVSS 208 because of minor test details would be absurd. Allstate said that the test procedures were developed over many years and have proven highly acceptable.

State Farm concurred with the SNPRM analysis of crash test variability and cited the UTQGS decision as undercutting the manufacturers' arguments.

State Farm concluded that FMVSS 208 is both practicable and objective, that the test procedures have been subject to court challenge and have been improved, and that the results of the NCAP repeatability program were conducted at 35 mph, not 30 mph as in FMVSS 208, where the vehicle must absorb 36 percent more energy. They said testing at 30 mph should result in less variance as well as lower readings.

British Leyland suggested "that at this point in the rule-making process, the subject of test procedures is not supremely important for discussion * * *."

Design to Conform

Because manufacturers believe that the variability in test results, particularly HIC, is so large that extensive overdesign would be required to ensure that all vehicles would comply with the standard, the concept of "design to conform" was suggested as a more appropriate measure of compliance.

Both Ford and American Motors suggested this concept in response to the NPRM. Ford said that to overcome the unacceptable jeopardy of being in noncompliance, as a result of the test procedure's lack of objectivity, compliance should be based on the design-to-conform concept, similar to that used in FMVSS 108. AMC favored the design-to-conform approach for the same reason as Ford, and also said that excessive variability was the same reason design-to-conform was adopted in standard 108.

In the SNPRM, the Department sought public comment on whether an approach which required a manufacturer to show that a vehicle was "designed to conform" to FMVSS 208, instead of requiring actual conformity with the standard's requirements, could be reconciled with the Sixth Circuit Court of Appeals decision in *Chrysler Corp. v. DOT*, 472 F.2d 659 (6th Cir. 1972), wherein the Court stated that compliance should be "obtained from measuring instruments as opposed to the subjective opinions of human beings." 472 F.2d at 676, and that "compliance be made by specified measuring instruments; there is no room for an agency investigation in this procedure." 472 F.2d at 678. Since the design-to-conform approach would require the manufacturer to justify to NHTSA that it had taken reasonable steps in the vehicle's design and testing to certify that it had been designed to conform to the standard's requirements, it appeared that adoption of this proposal would introduce unacceptable levels of subjectivity, contrary to the *Chrysler* court's direction, into what was heretofore an objective compliance procedure. Comments were also sought on the potential effects on vehicle design and construction under a design to conform approach.

Responses to the SNPRM by manufacturers showed agreement with the concept of design to conform as applied to FMVSS 208. Ford argued that if Standard 121, regarding air-braked heavy trucks (subsequently overturned by the courts) had had a design to conform provision, "it might well have been judged to be practicable, for manufacturers would have had the assurance that bona fide results of their own compliance tests would have to be taken into account in determining whether their products were in fact noncompliant." It said that dictum in *Wagner Electric* supports the lawfulness of a design to conform alternative to a strict compliance scheme.

Ford said that adopting a design to conform approach would not "materially" affect a vehicle's design and that its main effect would be to permit a manufacturer to not be

judged in noncompliance based on failure to meet the specified injury criteria in a single test, if the manufacturer had *bona fide* test results to verify that the designed level of performance had been achieved.

GM also supported the design to conform concept. GM argued that such a concept does not contravene the *Paccar* decision. It said design to conform is "compatible with the court's finding that all relevant factors must be considered in establishing a standard and would not require manufacturers to overcompensate for test variability to assure compliance."

GM added that a design to conform requirement would not materially change a manufacturer's approach to assuring conformity with FMVSS 208. GM believes that a manufacturer would still be required to demonstrate that the performance of its design would meet the requirement. GM also said that the philosophy of adopting design to conform in FMVSS 108 was based on the recognition of test variabilities and thus applies equally well to this standard.

VW said that it was uncertain about the effect of adopting design to conform language in the standard. VW contrasted what it called the accurate and precise test of Standard 108 with the variable test procedure of Standard 208. VW also believes that the Department essentially operates under such a concept.

Mercedes, Renault, and MVMA supported adoption of a design-to-conform standard.

Peugeot termed the concept "interesting" and said that NHTSA's concern was understandable. Peugeot suggested that an indepth study of the "reasonable steps" a manufacturer should take might be necessary.

Jack Martens, an automotive safety consultant, opposed a switch to a design-to-conform standard arguing that there will no longer be any means to ensure that the vehicle as purchased meets the performance requirement.

Thirty Degree (30°) Oblique Test

In commenting on the NPRM, both Chrysler and Ford suggested deleting the oblique test requirement in the standard. Ford argued that the test is redundant, since dummy readings are lower than in perpendicular barrier crashes, that it not only adds to development costs and time but also increases test result variability, and that it is a hindrance to airbag development. Chrysler's recommendation for deletion also was in the context of airbag development.

Although not directly addressing the test requirement, Renault said that airbags are not as effective as manual belts in oblique crashes and that their effectiveness limit corresponds to the 30° barrier impact conditions. Beyond 30°, Renault believes, airbag effectiveness is slight or nonexistent.

Peugeot claimed that airbags are less effective than manual belts at oblique crashes of 25 to 30 degrees, while Allstate said that the field experience with airbags indicates that they will be effective in crashes at frontal angles of 30° or greater.

The Department, in the May 10, 1984, SNPRM voiced its own concerns over the necessity of the 30° oblique test to assure proper passive restraint performance. NHTSA test data indicate that the instrumented dummy readings in such tests are consistently lower than in direct frontal barrier crashes due to a less severe crash pulse. Although the original rationale for the requirement appeared to be to ensure that car occupants were protected in oblique crashes, the data available for NHTSA indicated that the 30° test was unnecessary to achieve that goal. That is, the protection was provided regardless of whether or not the test was conducted. The elimination of the oblique test was proposed in the SNPRM and specific data were sought to support commenters' positions on the issue.

Most of the auto manufacturers and several other commenters offered remarks on the proposal. However, the manufacturers' opinions were split into three categories—in favor,

against, or retain the oblique test but eliminate the direct frontal barrier crash requirement.

Ford restated its belief that the oblique test is redundant and merely adds to the cost of testing, adversely affects lead-time and adds more unpredictability to the testing.

Ford referenced material it had submitted to NHTSA previously which contained data on 30° angular vs. frontal tests. These data related to Ford's 33-car barrier crash tests of 1972 Mercury airbag vehicles. Ford's February 1976 report on the subject, "Airbag Crash Test Repeatability" (ESRO Report No: S-78-3), stated that the results of the angular crashes were lower in magnitude and had less variability than the frontal crashes. In twelve frontal tests, average driver and passenger HIC values were 479 and 482, respectively. In angular tests, the respective means for HIC were 185 and 330, well below the values in the frontal crashes.

Favoring the deletion of the oblique test, due to its stated redundancy and its adding to costs, lead-time, and variability, were BMW, Volvo, Nissan, Mercedes, Honda, and Mazda. Mazda supplied data which showed a driver HIC of 779 and a passenger value of 758 in a frontal crash test using an experimental two-point passive belt while the corresponding values in the angular test were 488 and 302. Mercedes also stated that the oblique test is an obstacle to producing airbags.

Peugeot and Renault supported retention of the oblique test, arguing that it is more representative of the majority of actual crashes, and deletion of the perpendicular test. They stated this would be harmonized with a European regulation (WP 29/R237/REV 1).

Two manufacturers opposed the elimination of the test outright, while a third expressed concern over deleting the oblique test for airbag-equipped cars.

GM opposed deletion of the oblique test. It said that while "more angular tests would result in lower injury numbers than obtained from a perpendicular barrier test, angular tests are

more representative of the variety of frontal crashes that actually occur in the field."

GM further stated that it was their experience that the oblique test is "important in the evaluation of airbag performance."

Saab also opposed its deletion, terming the proposal "a way to cover up for a weakness in the airbag system." Saab stated that a test requirement must cover a large part of real world accidents.

VW supported, with reservation, the proposal to delete the 30 degree oblique test. VW recommended dropping the perpendicular test since the forthcoming Economic Commission for Europe (ECE) regulation on crash protection will only have an oblique test. VW said that an oblique test should be retained for vehicles which do not include upper torso belts, that is, airbag equipped cars.

The CFAS opposed deletion of the oblique test since it could compromise occupant protection.

IIHS supported the deletion of the oblique test if its elimination will promote the use of airbags.

The Breed Corporation favored the deletion of the oblique test, citing confidential data it had seen from manufacturers.

Adequacy of the Part 572 Dummy

In its December 1983 response to the NPRM, GM said that better diagnostic tools are needed to assure improved occupant safety, including better dummies. GM argued these tools should lead to improved test result repeatability. According to GM, the Part 572 dummy "is deficient as a tool on which to base assessments of the potential of all occupant protection technologies." GM believes their development of the Hybrid III dummy provides for such assessments and, as part of their response, petitioned NHTSA to permit the use of the Hybrid III dummy as an alternative test device (i.e., as a

substitute for the Part 572 dummy) in measuring compliance with FMVSS 208.

Although not responding directly to the relative adequacy of the GM Hybrid III dummy, the Department concluded, in the SNPRM, "that the test dummy (i.e., the Part 572 dummy) is a repeatable test device and is not a major source of the variability found in NHTSA's 35 mph repeatability test series." It was further stated that NHTSA would address the merits of GM's petition to permit the use of the Hybrid III as an alternative test device in a separate rulemaking action at a later date.

Several manufacturers took exception to the Department's conclusion that the Part 572 dummy was a repeatable test instrument and met the appropriate statutory criteria. Peugeot said that the current dummy is one cause of test result variability and thus it does not meet the statutory criteria. But, since manufacturers need some reference test instrument, Peugeot said that even though its use is questionable, "it must be maintained."

American Motors described the dummy as "a state-of-the-art compromise—it lacks in reasonable measurement fidelity."

Volvo said that "the present Part 572 test dummy has serious limitations with respect to its use for determining compliance with FMVSS 208." Volvo believes design and material improvements are necessary to make the dummy more durable, repeatable, and trouble-free.

Toyota said that there was "uncertainty of the influence of [the] Part 572 dummy tolerances on crash test results" while Ford said that although the calibration of the dummy is repeatable, its performance in barrier crashes may not be. Ford questioned the Department's conclusion that the dummy is not a major source of variability.

GM again reiterated the potential benefits of the Hybrid III dummy and called for quick action on its petition, saying that

a delay could hamper installation of new technology in its vehicles.

This view was supported by Nissan which said it believes the Hybrid III demonstrates greater repeatability than does the Part 572 dummy. Nissan believes the Hybrid III has a more controlled twisting motion and offers a greater degree of control and stability.

Mercedes disagreed with the conclusion that the Part 572 dummy satisfies all legal criteria because it is "not sufficiently repeatable for compliance test purposes." Mercedes also stated that "the Hybrid III provides no improvement in this regard."

Conversely, Renault said that it agreed with NHTSA that "the present Part 572 dummy is not the major cause of the dispersion of results."

Adoption of NCAP Test Procedures

As a result of its repeatability test program, NHTSA amended the test procedures (IP 212-02) for the New Car Assessment Program to reduce any variability associated with the test procedures themselves. Since the NCAP procedures are more specific than the current FMVSS 208 requirements (in terms of dummy foot placement, placement in the seat, etc.) and since the test procedure is an integral part of complying with the standard, it was proposed in the SNPRM that the NCAP test procedures, aside from those aspects solely related to the consumer rating program such as the need for high-speed cameras, testing at 35 mph, etc., be adopted in FMVSS 208. It was argued that the increased specificity of these procedures would further reduce any variability associated with the test procedures themselves.

Most manufacturers favored, or at least took no exception to, the adoption of the NCAP procedures, although many felt it would do little to reduce variability. AMC said that the changes associated with adopting the NCAP procedures were

"very minor" and could not be expected to significantly reduce variability. AMC contended that other sources of test procedure variability, such as safety belt tension and actual dummy position just prior to impact, are still not accounted for in the NCAP procedures.

Volvo said that the procedures were "a step in the right direction" but doubted whether variability would be reduced significantly by their adoption. Volvo said that other sources of variability, such as belt geometry and identical dummy positioning, still exist.

Nissan did not comment on the adoption of the procedures themselves, but also stated that dummy positioning may not be properly specified. To aid in this regard, Nissan recommended that dummy placement be further specified by dimensions of dummy-to-car part distances.

Toyota deemed the adoption incomplete and said that the timing of dummy installation prior to impact and the extent of the breaking-in between the dummy's hip and the seat materials was also important.

Mercedes, as did Volvo, said that the NCAP procedures were "moving in the right direction."

Conversely, VW said it "has no confidence that the changes proposed will cause a significant reduction in variability" and that the Department has not provided any data to show that variability will be reduced. The lack of data to support the contention of reduced variability was also cited by MVMA and Ford.

While Honda said that NCAP test procedures were "inadequate" to reduce variability, Renault stated it had "no objection" to their incorporation in FMVSS 208. Mazda agreed that there would be some reduction in variability with their adoption. Renault also asked whether all these types of problems are solved by their adoption.

MVMA, Ford and GM also claim that the latest revisions to the NCAP test procedures, dummy foot placement and seat placement, were already incorporated when the repeatability tests were conducted by NHTSA: thus no reduction in variability from the values shown in those tests could be expected from their adoption. Ford also contended that adequate public notice was not provided on this issue since the precise NCAP procedures to be incorporated in FMVSS 208 were never specified.

Head Injury Criteria (HIC) Measurements

The SNPRM sought public comment on whether HIC should be measured in the absence of the dummy's head contacting the vehicle interior. It was pointed out in the notice that the historic derivation of HIC was based on the head striking something. It was also noted in the SNPRM that NHTSA had permitted, for belt systems, the compliance with the HIC criterion only when head contact was made and only for the duration of head contact. The Department pointed out that because of some conflicting data and because it believed that a non-contact HIC criterion act as a surrogate for neck injury, it was not proposing to change the standard.

Peugeot, AMC, Volvo, Mercedes, VW, Renault, MVMA, Ford, GM and Mazda favored eliminating measurement of HIC in the absence of head contact. Only Allstate opposed this, claiming that it prevents cervical and spinal injuries. BMW, VW, and Mercedes also favored raising the HIC criterion, even if there is dummy head contact to a level of 1500, as proposed in a petition to NHTSA by the Committee on Common Market Automobile Constructors (CCMC).

Peugeot said that they believe HIC is not a good criterion to protect against neck injury and that further research needs to be done on the subject. This view was supported by Volvo, Renault, and Ford. Peugeot, Honda, and GM also said that there is no basis to use a different—for example, 1500—value

for HIC in the absence of head contact. They believe HIC should not be measured at all in such circumstances.

Volvo said that the origin of HIC was based on forehead impacts and only for accelerations in the anterior-posterior components. Volvo said it was little wonder, as HIC is now used in FMVSS 208 for non-contact accelerations, including those in lateral directions, that HIC readings have little real-world relevance. AMC and Chrysler also claimed little relevance between HIC and the potential for real-work injury. Conversely, HIC submitted data, based on calculation of HIC and associated real-world injuries to baseball players who were struck in the head, that there is real-world relevance of HIC and that serious injuries, even death, occur at HIC Values of 1,000. The CFAS also said that higher HICs would compromise occupant protection.

Ford, although agreeing that non-contact head accelerations can produce injury, claimed that there was no correlation between the likelihood of such brain injuries and HIC values, nor was there any relation between neck injuries and HIC.

In commenting on HIC in general, Peugeot and Renault asked that HIC values based on dummy head to knee contacts also be eliminated from measurement because the dummy's knee is much harder than the human knee, leading to higher values of HIC than would be expected in actual crashes.

Testing of Safety Belts

Commenting on the NPRM, Chrysler, VW, and Ford said that there was no need to dynamically test automatic safety belts, and that the static test requirements of FMVSS 209 and FMVSS 210, as currently related to manual belts, be applied instead. It was argued that current manual belts, which are not tested dynamically, have been proven effective as evidenced by worldwide data. Thus, the companies argue, there is no reason to test automatic belts any differently than manual belts. Dynamic testing of belts only adds to development time and costs without resulting in a higher level of

safety. Recognizing the problem of assuring prevention of submarining for two point automatic belts, VW suggested that a compliance test be added for knee bolsters. Ford also suggested that the anchorage location requirements of FMVSS 210 be waived for automatic belts.

Allstate said that the fact that manual belts are not dynamically tested results in the consumer having no assurance that the restraint system in a particular vehicle will perform as it is supposed to and, thus, is the "safety scandal of the century."

No new comments were offered on this subject in responding to the SNPRM except from Jack Martens, who said that replacing the dynamic test requirement of FMVSS 208 for automatic belts with the static tests of standards 209 and 210 could result in lower quality levels for restraints. Instead, he agreed with Allstate that manual belts be dynamically tested for compliance.

Impact Test Speed

In responding to the SNPRM, GM proposed an additional set of test criteria for NHTSA to consider. GM said that if some form of passive requirements should be restrained, then in addition to the current test procedures in FMVSS 208 for automatic restraints, an additional alternative of complying with manual belts, at two test speeds, should be provided. GM's proposal would permit compliance with manual belts if all FMVSS 208 criteria were met at 30 mph, with the manual belts buckled around the test dummies, and all criteria were also met at 25 mph, with the dummies unrestrained (i.e., belts unbuckled). GM believes this proposal would allow both consumers and manufacturers to choose between active and passive restraints while improving overall motor vehicle safety. GM also asked that the Hybrid III, or equivalent dummy in terms of biofidelity, be permitted as the test instrument.

GM claims safety benefits for their proposal equivalent to 36 percent belt usage. Their estimate is based on the reduction of

total harm (which is a surrogate for the weighing of various severities of injuries by their dollar consequences) of 12 percent, which is derived by calculating the percent reduction of harm which occurs at 25 mph assuming that all current injuries were reduced in severity by one AIS level. Since GM believes that no more than a 5 percent increase in belt usage would occur with passive belts, and since the 85 percent of individuals who currently do not use their safety belts would benefit by their proposal, total safety benefits could be nearly 17 times higher. GM further states that although they only calculated benefits for reductions in harm due to frontal crashes, benefits could also be extended to other crash modes.

GM envisions that its proposal would result in greater manufacturer flexibility in offering improved occupant safety than does the current FMVSS 208 criteria and would subsequently result in the development of a variety of occupant safety technologies, such as "safer" steering columns, interior padding, door latches to prevent ejection, windshield glazing, etc. GM stated in the NPRM response that reimposition of FMVSS 208 without changes so as to permit such "built-in" safety to be developed could result in the reduction of the firm's efforts in this area due to diversion of engineering resources.

IV. Analysis of the Data

Usage of Occupant Protection Systems

General

Restraint systems will only have safety value if they are used by occupants or are in a state of readiness such that they provide protection from harm when required to do so. The following paragraphs describe these characteristics of the various restraint systems.

Manual Belts

Various changes have been required over the last 25 years to seatbelt designs to improve manual belt usage (replacing separate lap and shoulder belts and buckles with an integrated lap and shoulder belt having a single buckle and adding an inertial reel to give occupants freedom of movement) and to remind occupants to use their belts (adding brief audible and visible reminders). Nevertheless, the rate of manual belt usage has not changed substantially over the 15-year history of FMVSS 208 (except during the brief period around 1973 when interlocks and continuous buzzers were used).

Based on recent NHTSA data, the overall safety belt usage rate for front seat occupants is 12.5 percent. This information also showed that usage varies significantly by seating position—14 percent for drivers, 8.4 percent for passengers in the right front seat, and 5 percent for passengers in the center seat.

Departmental studies have noted other interesting statistics about usage of manual belts:

- People involved in more severe accidents use their restraint systems less often than the general driving public. (One theory is that belt wearers are more cautious and less prone to severe accidents.)

- Import car occupants have substantially higher seatbelt usage than domestic car occupants. (For example: usage in domestic subcompacts was 12.3 percent, while in import subcompacts usage was 22.1 percent in 1981-82.)

- Seatbelt usage increases as car size decreases. (In 1981-82, usage was 16.8 percent in subcompacts, 10.5 percent in compacts, 7.4 percent in intermediates and 5.4 percent in full-size cars.)

- Usage is higher in newer cars than in older cars. (In 1981-82, the usage in MY 81-82 cars was 16.0 percent; the usage in MY 79-80 cars was 12.6 percent.)

Automatic Belts

Usage rates for automatic belts vary substantially depending on the particular type of belt design and on the method of measuring usage. (Around 500,000 American fleet automobiles have been equipped with automatic belts; they include some 1975-1984 VW Rabbits and 1978-1980 GM Chevettes, and the 1981-1984 Toyota Cressidas.)

Studies of usage rates of existing automatic restraints are not necessarily applicable to systems that would be used to comply with an automatic restraint requirement. For example, nearly 80 percent of the existing systems (in VW Rabbits) are voluntarily equipped with starter interlocks (which DOT is prohibited by law from requiring), some owners purchased the systems voluntarily, disconnection and storage of the belts on some systems was very easy, some were installed only on rental vehicles (drivers may be atypical and, also, may not try to take long-term action to defeat the system), and some involved the more expensive motorized (with easier ingress and egress) systems. Based on the record of this and previous rulemakings, manufacturers are unlikely to equip automatic restraint vehicles with either interlocks or motorized systems. The most likely system, given that manufacturers have freedom of choice, may be the detachable automatic belt. Since this is the system for which little field experience exists, application of the current usage data to a future fleet of all automatic belt equipped vehicles may not be appropriate.

Current usage estimates for the VW Rabbit range from about 50 percent based on accident data to 80 percent based on traffic observations to 90 percent from telephone surveys. Chevette usage, based on an extremely small number of observations, is about 70 percent (a similar value is derived from telephone surveys), while Cressida belt usage appears to exceed 90 percent (observations and telephone surveys.)

The Department's estimate of future usage is based on an analysis of existing systems and surveys of usage and attitudes.

Essentially, the Department tried to determine whether certain features of automatic belts might overcome some of the reasons people do not use manual belts, while recognizing the wide range of belt systems likely to be produced under a mandate. Our current estimate for automatic belt use covers a broad range: 20-70 percent. We expect usage rates for automatic belts to be higher than current manual belt usage because of the automatic nature of the belt, which would overcome some of the stated reasons for not buckling up: laziness, forgetfulness, and not wanting to be bothered. Although precise estimates are impossible, it seems reasonable that some increment of increased usage should be imputed to nondetachable belts, since some effort would be required to deactivate them.

There is no way to know precisely where within the range the automatic seatbelt usage rate would actually fall. The actual rate will depend on many considerations, such as comfort and convenience (including ease of entry and exit) and appearance. Education programs and proven on-the-road effectiveness could also effect usage.

Airbags

Impact protection benefits for airbags do not depend on usage since the occupant does not have to do anything. (However, as discussed elsewhere in this preamble, for greater protection, a lap belt should also be used.) As to whether airbags will deploy when they should, the Department believes that airbag technology is reliable and that airbags would function properly (they will not activate inadvertently and they will activate when they should) in virtually all instances. The automobile manufacturers agree. Two manufacturers stated their goal for reliability of airbags to be at least 99.99 percent.

Although usage is not a factor with airbags, "readiness" is. In the Department's Final Regulatory Impact Analysis (FRIA), based on an analysis of the number of automobiles

involved in accidents, the Department determined that, if all automobiles were equipped with airbags and none of the airbags were repaired after an accident, 1.2 percent of the fleet would be without airbags at all times. This figure would be slightly higher if there were inadvertent deployments and they were not repaired. The Department has no reliable methodology for determining what percent of these airbags would, in fact, not be repaired. Because it would be very difficult to dismantle or remove an airbag—much more difficult than a belt system—and because it is not obtrusive, the Department estimates that only a small percent of car owners—perhaps one percent—would defeat the airbag. If, as a result of these two problems, two percent of all automobiles were without airbags at any one time, airbags would still be ready to deploy in 98 percent of the fleet. Thus, for analysis purposes, the Department estimates that airbag readiness would be 98 percent.

As explained in the next section, a lap belt or a lap/shoulder belt should be worn with an airbag to obtain maximum protection in side and roll over accidents, as well as in frontal crashes. Because of this, questions arise over the usage rate of the belt system supplied with an airbag. (The Department does not know whether manufacturers would supply lap/shoulder belts or just lap belts.) One argument is that belt use would decline because people would believe that airbags give ample protection. On the other side, it is contended that usage will increase if just lap belts are provided because the shoulder belt portion makes the belt uncomfortable to some people and lap belt usage in the past was near 20 percent. Education may help overcome the “decrease” argument, but habit (people are unlikely to change their habits) may also overcome the “increase” argument. As a result, in its benefit calculations, the Department has assumed that current belt usage will continue with respect to the belts accompanying airbags. (12.5 percent)

Other Automatic Occupant Protection Technologies

As with airbags, passive interiors do not have a "usage" rate applicable to them. However, unlike airbags, there are no deployment, replacement, or inactivation problems associated with them. Thus, the readiness factor of other known technologies is assumed to be 100 percent. As with airbags, lap belts or lap/shoulder belts might be required for protection in other crash modes (i.e., side, rear, rollover).

Effectiveness of Occupant Protection Systems

General

The safety benefits to be derived from any occupant restraint system are a function of both the usage (or readiness) of the system and its effectiveness, when used, to reduce injuries or deaths. Effectiveness of an occupant restraint system is expressed as a percentage reduction in injuries or deaths when compared to the situation when an occupant is unrestrained. If, in 100 crashes, a system would prevent the death of 60 percent of the occupants who would have been killed if they were unrestrained, then it would be rated as 50 percent effective in reducing fatalities. It is important to note two points in this regard: (1) some crashes are so severe that no occupant protection system could prevent death or injury; (2) when a device prevents a fatality or serious injury that otherwise would have occurred, the individual may suffer a less serious injury instead. (As a result, a device that is more effective at reducing serious injuries, may appear less effective, statistically, at reducing minor injuries.)

The Department's estimates for the effectiveness of the various occupant restraint systems are presented in Table 4.

Table 4 — Summary of Effectiveness Estimates

Injury	(All accident directions)					
	Manual lap belts	Manual lap and shoulder belts	Automatic belts	Airbags alone	Airbags and lap belts	Airbags and lap/ shoulder belts
Fatal.....	30-40	40-50	35-50	20-40	40-50	45-55
Moderate to critical	25-35	45-55	40-55	25-45	45-55	50-60
Minor	10	10	10	10	10	10

Finally, it should be noted that, in general, the Department has less confidence in the effectiveness estimates for minor injuries than for more severe injuries due to reporting problems; many people do not report minor injuries or do not know they are injured until the next day and thus the injuries may not appear on police reports (the main source of injury data). While the relative effectiveness of the various systems should be unaffected, there is some doubt about whether the overall level of effectiveness for minor injuries is accurate.

Manual Belts

The effectiveness of manual belts is based on a comprehensive analysis of accident data, involving thousands of accidents. The estimates take into account various factors, such as the fact that occupants who wear their belts are generally involved in less severe accidents than unrestrained occupants. If factors such as this were not "controlled," the raw data would over-estimate effectiveness. Although "controlling" the data helps, it cannot pinpoint an exact effectiveness estimate. For that reason, ranges were used. Nevertheless, the Department has the greatest confidence in the estimates of manual belt effectiveness.

Automatic Belts

To determine the effectiveness of automatic belts, the Department reviewed a number of different data sources analyses of accidents involving existing automatic belt systems, crash tests, and a study by the Canadian Government, referred to below. Since most of the available accident data involve a 2-

point automatic belt with a knee bolster, the Department's conclusions on the effectiveness of all types of automatic belts lack a statistically reliable base. In addition, in our analysis of accident data involving VW rabbits with automatic belts, the Department was unable to determine with certainty the usage rates of the automatic belts. Because of the lack of final usage data, effectiveness could not be estimated with as much confidence as was done for manual belts.

Furthermore, recent research by the Canadian Government has indicated that the absence of a lap belt may result in the 2-point automatic belt being less effective in preventing ejection. In addition, the door mounted, 2-pointed belt may have little capability of preventing ejection of an occupant in the event of an accidental door opening during a collision. However, even a 3-point automatic belt will not prevent all fatalities involving ejection, since some fatalities occur as a result of impacting interior components before ejection, while others occur as a result of occupant contact with objects outside the vehicle after partial ejection. Moreover, the door mounted belt in the 2-point system may actually prevent door openings in many instances, since the "loading" of the belt (which is attached to the door) can tend to keep the door closed during a crash.

Three-point automatic belts should be as effective as manual belts, and the Department's estimates for effectiveness of automatic belts reflect this. Automatic belt effectiveness estimates have been adjusted downward by 5 percent at the lower end of the range because there is some evidence that 2-point belts may be less effective than 3-point belts.

Airbags

Because of limited field experience with airbags, estimating the effectiveness of these devices is very difficult. There are so few cars equipped with airbags and so few cases of serious or fatal injuries that the field experience has no statistical meaning. Based on field experience through December 31, 1983,

(excluding prototype and test fleet vehicles) and a front seat fatality count of 10, the computed airbag and manual belt effectiveness (as used in the equivalent cars) for fatalities is now the same. This means that airbags would not save any more lives than the belt systems as used in those cars. But because the data base is so small, we cannot place any confidence in this effectiveness figure. Based on a normal "confidence interval" (statistical certainty) of 90 percent, all that can be stated based on the field data is that airbags could range from being 46 percent more effective than the manual belts as used in the same cars to 70 percent less effective. Small changes in the number of fatalities would have drastic changes in these effectiveness estimates. Also, the comparisons are to manual belt usage in equivalent 1972-1976. Belt usage in these cars was high compared to usage in later models, because they had, first, continuous light and buzzer reminders and, then, interlock systems. The airbag and equivalent manual belt cars also were very large and had low fatality rates. Finally, the accidents—small in number—were frequently atypical and involved a greater than normal number of circumstances where a restraint system could not provide protection (such as a drowning). All of these factors indicate that the "true" effectiveness could be significantly higher than in this small fleet.

Current estimates of airbag effectiveness are based principally upon four new analyses which have recently been conducted by NHTSA. The three studies concerned with fatality effectiveness all use the National Crash Severity Study (NCSS), major accident data collection program designed to result in a nationally representative sample. Effectiveness was estimated by partitioning the NCSS accidents into various sub-groups by distinguishing characteristics and then making judgments about whether an airbag could prevent the fatalities that occurred in that sub-group. A fourth study estimated moderate to critical injury effectiveness by comparing injury

rates sustained in the airbag fleet cars to a comparable non-airbag group in the NCSS file.

We have relied on these new studies primarily because they are based on a relatively large, representative set of unrestrained fatal accident cases. These data, as well as the now available eight-year census of fatal accidents, were unavailable to NHTSA when the automatic occupant protection requirements were first promulgated in 1977. Thus, effectiveness estimates which are not derived from field experience now have a large file of accident data upon which to be based. Further, NHTSA assembled a task force comprised of experts in the field of restraint design, crash testing and accident data analyses to ensure that the resulting estimates represented a consensus of varying judgments and expertise.

However, it must be noted that even these new analyses have a significant degree of uncertainty associated with them. For the most part, they rely on judgments about airbag performance based on limited field experience and controlled crash testing. This technique has obvious limitations, because death and injury in highway accidents are very unpredictable.

There is little disagreement that airbags will function very well in non-catastrophic, frontal or near frontal collisions up to speeds approaching 45 mph and will offer little or no protection in rear end collisions. The real issue concerns airbag effectiveness in side or angle impacts, rollover, and catastrophic frontal crashes. Because the Department is undecided on airbag effectiveness in the latter three situations, a wide range of estimated effectiveness for airbags has been provided. The lower portion of the range (20-25 percent) is generally consistent with the assumption that airbags will have fairly low effectiveness in side and rollover crashes. With progressively more optimistic assumptions regarding their performance in these types of crashes, the overall effectiveness estimate approaches the higher end of the range (40 percent). The 20-40 percent range fully encompasses the above

dichotomy of assumptions. The zero percent field experience figure is discounted because of its statistical unreliability, crash test data showing superior performance of airbags at higher speeds than for manual belts, and statements to the docket.

Other Occupant Protection Technologies

Effectiveness estimates for other technologies are currently unavailable.

Conclusions

Some conclusions can be drawn from the general effectiveness data that have been developed. First, the most effective system is an airbag plus a lap and shoulder belt. To obtain maximum protection in not only frontal, but also side and roll over accidents, occupants of cars with airbags and lap belts must use a lap belt to supplement the airbag. An airbag plus a lap belt provides an equivalent level of effectiveness to a manual lap and shoulder belt system. Finally, an airbag alone is less effective than a manual lap and shoulder belt or automatic belt, when those systems are used.

Benefits of Occupant Restraint Systems

Safety Benefits

With its estimates for usage and effectiveness, the Department can determine benefits by multiplying the product of those two estimates by the fatality or injury figure. The final result is the number of fatalities or injuries prevented. Table 5 shows the incremental benefits; i.e., the benefits over and above those accruing from current levels of restraint usage. The numbers provided in Table 5 are annual benefits assuming full implementation. They are based on *all* cars on the road having the restraint system noted (which would not be the case until at least ten years after full implementation). Mixes of restraint systems, for example, half of the cars with airbags and half with restraint systems, for example, half of the cars with airbags and half with automatic belts, would lead

to results between the values shown for those systems. The numbers also reflect the mid points, as well as the extremes, of the effectiveness ranges provided in Table 4. For these calculations, belt usage with airbags was assumed to be current levels of restraint usage. The Department has also provided data on the benefits of airbags even if belts were not used. A range of benefits is provided for automatic belts and mandatory belt use laws, because of uncertainty over usage rates.

Table 5.—Annual Incremental Reduction in Fatalities and Injuries

	Fatalities			Moderate-Critical Injuries		
	Low	Mid-point	High	Low	Mid-point	High
Airbags only	3,780	6,190	8,630	73,660	110,360	147,560
Airbags with lap belts (12.5 percent usage) . .	4,410	6,670	8,960	83,480	117,780	152,550
Airbag with lap/shoulder belts (12.5 percent usage)	4,570	6,830	9,110	85,930	120,250	155,030
Automatic Belts						
Usage:						
20 percent	520	750	980	8,740	12,180	15,650
70 percent	5,030	6,270	7,510	86,860	105,590	124,570
Mandatory Belt Use Laws (Manual Belts)						
Usage:						
40 percent	2,830	3,220	3,590	47,740	53,440	59,220
70 percent	5,920	6,720	7,510	100,430	112,410	124,570

Another aspect of the analysis of benefits is the difference in short-term benefits of the different alternatives. Roughly one-tenth of the American fleet of automobiles is replaced every year. Although some automobiles are kept beyond 10 years, the Department generally assumes that, ten years after a rule requiring a safety device on new automobiles has been implemented, that device would be in place in virtually the entire American fleet. In this regard, mandatory seatbelt use laws that are enforced can have a distinct advantage in that they

can be applied to all automobiles in the existing fleet immediately rather than only new cars. Since the precise date at which different states would pass and implement a mandatory belt use law can not be judged, it is difficult to predict with certainty when benefits would accrue and what the level of those benefits would be.

However, comparisons can be made based upon reasonable assumptions. For example, if all states pass a mandatory belt use law and usage throughout the nation increased to 70 percent or more within three years, the short-term benefits (over the next 10 years) would be 2.5 times higher for such laws than those associated with airbags or with automatic belts at the 70 percent usage level. As the amount of time necessary to pass the laws increases, or the number of states passing such legislation decreases, or if usage does not increase to 70 percent, the short-run (and long-run) benefits of mandatory belt usage would decrease compared to the benefits of airbags (and possibly automatic belts if they are used at high levels). Nevertheless, the benefits of mandatory belt use compared to the introduction of automatic restraints are substantial.

Table 6 compares benefits for the first ten and fifteen years after the introduction of automatic restraints into the fleet with those associated with mandatory belt use laws. Three use law scenarios are examined. If all states quickly pass a mandatory belt use law and usage increased to 70 percent or more, short term benefits (over the next 10 years) would be about 2.5 times higher than benefits with airbags or automatic belts with 70 percent usage. Thus, unless all cars had airbags, or automatic belt usage approached 70 percent, the long-run (15 years) benefits of automatic restraints would be unlikely to approach those associated with rapid passage of state belt use laws. The short-run safety benefits of such laws are always likely to be higher.

Table 6.—Time Phase Analysis of Fatality Benefits

Year	Air bag with automatic belt		Mandatory belt use law, 40 to 70 percent usage		
	12.5 percent usage of lap belt	20 to 70 percent usage	Scenario 1	Scenario 2	Scenario 3
1.....	400	50-380	3,220-6,720	2,160-4,500	680-1,650
2.....	1,000	110-940	3,220-6,720	2,160-4,500	730-2,100
3.....	1,590	180-1,500	3,220-6,720	2,160-4,500	790-2,540
4.....	2,180	250-2,050	3,220-6,720	2,160-4,500	840-2,980
5.....	2,730	310-2,570	3,220-6,720	2,160-4,500	890-3,400
6.....	3,230	360-3,030	3,220-6,720	2,160-4,500	930-3,770
7.....	3,690	410-3,470	3,220-6,720	2,160-4,500	970-4,120
8.....	4,130	460-3,880	3,220-6,720	2,160-4,500	1,010-4,450
9.....	4,560	510-4,280	3,220-6,720	2,160-4,500	1,250-4,770
10.....	4,960	560-4,660	3,220-6,720	2,160-4,500	1,090-5,070
Total (1 to 10) ...	28,470	3,200-26,760	32,220-67,200	21,600-45,000	8,980-34,850
11.....	5,340	600-5,010	3,220-6,720	2,160-4,500	1,120-5,350
12.....	5,660	640-5,320	3,220-6,720	2,160-4,500	1,160-5,600
13.....	5,900	660-5,530	3,220-6,720	2,160-4,500	1,170-5,780
14.....	6,090	680-5,270	3,220-6,720	2,160-4,500	1,190-5,920
15.....	6,240	700-5,860	3,220-6,720	2,160-4,500	1,200-6,030
Total (1 to 15) ...	57,700	6,480-54,220	48,300-100,800	32,400-67,500	14,820-63,530

Scenario 1—It is assumed that all states have mandatory belt use laws which are in effect at the time that an automatic occupant protection standard becomes effective for new cars.

Scenario 2—It is assumed that 67 percent of the population is subject to mandatory belt use laws which are in effect at the time that an automatic occupant protection standard becomes effective for new cars.

Scenario 3—It is assumed that 20 percent of the population is subject to mandatory belt use laws which are in effect at the time that an automatic occupant protection standard becomes effective for new cars. The remaining 80 percent of the population would have cars equipped with automatic belts, with usage in the 20-70 percent range.

Conversely, if a large number of states do not pass a law, or it takes a long time to get the state laws passed, or usage does not increase to 70 percent, then the short-run and long-run benefits of mandatory belt usage and automatic restraints may be equal.

Insurance Savings

The potential reduction in fatalities and injuries that would result from mandating automatic restraints could produce a corresponding decrease in funeral, medical, and rehabilitation expenses. A reduction in these expenses could, in turn, result in reductions in premiums for any insurance that covers them. (Automobile insurance premiums could also increase to cover

added expenses due to accidents or thefts involving airbag equipped automobiles. This is discussed later in the preamble.) The Department cannot be certain that consumers would receive any premium reductions, or, if they would, what their magnitude might be. Most insurance industry representatives are reluctant to provide quantitative estimates of potential savings to consumers. However, at least one company provided an independent estimate and one state official assured the Department that he will mandate such reductions in his state.

The Department, based on the potential safety benefits discussed previously and an estimate of the portion of premiums associated with front seat occupant fatalities, estimates that the discounted value of automobile insurance savings (assuming a 10 percent discount rate and a 10 year vehicle life) could be, based on the midpoints of the effectiveness ranges, \$95 for cars equipped with airbags. Spread over the entire vehicle fleet (including uninsured vehicles), the discounted value is \$89. For belt systems the savings would depend upon usage rates but could be as high as \$85 per insured car and \$79 when spread over all cars, if usage rose to 70 percent; at 20 percent usage, the figures would be \$10 and \$9, respectively.

The Department's analysis also showed that between \$49 million and \$1,100 million could be saved annually in health, life and worker's compensation insurance and governmental payments for social services such as Medicare, Medicaid, disability insurance, etc. The discounted value of these insurance and governmental payment savings expressed on a per vehicle basis would be in the range of \$2 to \$61.

Table 7 summarizes the insurance savings that could result from a requirement for automatic occupant restraints. These potential insurance savings do not account for some offsetting insurance premium increases for airbag equipped cars, which are discussed later.

**Table 7.—Summary of Potential Savings On Insurance
Premiums From
Automatic Restraint Requirements**

	Per vehicle annual savings (dollars)	Per vehicle lifetime savings (dollars)	Total annual savings (M) 1990 fleet equivalent
Air bags:			
Automobile insurance	9-17	62-115	1108-2046
Health insurance	4-8	29-54	521-962
Life insurance	0-1	3-7	62-136
Total	<u>13-26</u>	<u>94-176</u>	<u>1691-3144</u>
Automatic belts (For 20 percent assumed usage):			
Automobile insurance	1-2	5-14	89-243
Health insurance	0-1	2-7	42-114
Life insurance	0	0-1	7-14
Total	<u>1-3</u>	<u>7-22</u>	<u>138-371</u>
Automatic belts (For 70 percent assumed usage):			
Automobile insurance	10-14	65-94	1146-1676
Health insurance	5-7	31-44	539-788
Life insurance	1	4-6	71-106
Total	<u>16-22</u>	<u>100-144</u>	<u>1756-2570</u>

Public Acceptance of Occupant Protection Systems

The public acceptance of safety devices likely to be installed in compliance with Federal motor vehicle safety standards is one of the factors which must be considered by the Department in establishing those standards. In *Pacific Legal Foundation v. DOT*, the court found that in order for a safety standard to be practicable and meet the need for safety, the safety devices to be installed pursuant to the standard must be acceptable to the public. The Department has attempted to determine the likely public attitudes toward manual and automatic restraints and mandatory safety belt usage laws based on public opinion surveys. In analyzing these surveys, the Department recognizes that the usefulness of the surveys as predictors of future public attitudes is limited by several factors. One is the public's lack of experience with automatic restraints on which to base its opinions. In view of the increase in favorable attitudes toward automatic belts by owners of automatic belt cars between the time of initial ownership and

a later time, the Department believes that gradual exposure of the public to automatic restraints will increase the acceptability of those restraint systems above the levels indicated in the surveys. Equally important, most of the surveys are more than several years old. Since public opinion appears subject to change in relatively short periods of time in this area, as is evidenced by the fairly rapid enactment of child restraint usage laws in most states, there is additional reason to believe that these surveys may not accurately reflect future public attitudes and perhaps not even current public opinion.

Awareness/knowledge of automatic restraints. The extent of the survey respondents' knowledge about automatic restraints is important in assessing the validity of the surveys as predictors of public reaction to automatic restraints. The less knowledgeable the respondents are, the less weight can be given to the survey results. Several surveys made in the late 1970's and early 1980's show that considerably higher percentages of the people surveyed were aware of airbags than automatic belts. The figures for airbags were 62 to 93 percent of the respondents, while those for automatic belts were much smaller.

Government's role in making automatic restraints available. There were a variety of deficiencies in the surveys which included questions about public attitudes toward a government requirement for airbags or automatic restraints. For example, most surveys did not attempt to ascertain the degree of the respondents' knowledge of airbags and did not inform respondents about the cost of automatic restraints. Eight of the 12 surveys which attempted to ascertain public attitudes found that respondents favored a Federal requirement. Based on its analysis of those surveys, the Department concluded that while many people do not favor such a requirement on all new cars, there is also a substantial number who state their willingness to purchase cars with automatic restraints. Thus, initial public reaction will be divided. Public education and the performance of automatic restraints will be the key factors in

determining the long run public acceptance of automatic restraints.

How much would the public pay for airbags? The surveys on the willingness of the public to purchase airbags indicate that only a small percentage appears willing to pay more than \$400 or would expect to pay less than \$100 for any airbag system. The majority of respondents cluster around the \$200-\$300 levels, covering a range of approximately \$150-\$350. Toward the upper end of this cost range, the driving public is roughly evenly divided in its willingness to buy airbags. This suggests that a substantial potential market for airbags exists and that a significant portion of the public would opt for them if they were priced within the \$150-\$350 range and available in sufficient quantities.

Attitudes toward manual belts, automatic belts and airbags. The surveys generally indicate that the public views automatic belts as superior to manual belts in comfort and convenience and that these characteristics would apparently override some of the reasons respondents give for not using manual belts. Those reasons include not wanting to be bothered with belt usage and being lazy and forgetful. At the same time, some of the reasons for not using manual belts appear equally applicable to automatic belts, e.g., fear of entrapment, doubting the value of safety belts, and not wanting to be restrained.

Airbags were rated highest on comfort, convenience and appearance and were perceived to be safer than other restraint systems by infrequent belt users. Primary concerns expressed about airbags relate to reliability, whether they will work when needed or deploy accidentally, and cost.

Public attitudes toward mandatory safety belt usage law. Surveys made in the 1970's indicate that the public is divided on the issue of mandatory belt usage laws when the concept of sanctions is not mentioned; two 1983 surveys found the public to favor mandatory use laws. When the possibility

of sanctions was mentioned as part of several surveys taken in the 1970's there was increased opposition to mandatory use laws. Since the newest of these surveys involving sanctions is six years old, the Department does not have a current reading of nationwide public opinion.

Public opinion surveys—docket submissions. Two public opinion surveys on occupant restraint issues were submitted to the docket, one by GM and the other by IIHS. Since both surveys included questions whose wording appears to have affected the answers, the Department does not believe that the answers to those questions can be regarded as accurately reflecting current public attitudes. For example, some questions failed to mention either the benefits or the costs of automatic restraints. In addition, there are reasons for questioning the representativeness of the sample of respondents.

As to whether there should be airbags in new cars, the GM survey found that 51 percent of the respondents favored installation if the price were \$100. That number dropped to 35 percent if the price were \$320 and to 19 percent if the price were \$500. The GM survey also asked whether the respondents would favor installation of automatic belts at a additional cost of \$100. Thirty-eight percent answered affirmatively.

IIHS' survey asked whether airbags and automatic belts should be standard or optional equipment. Fifty-six percent favored installation as standard equipment and 40 percent as optional equipment. When the 44 percent who did not believe that automatic restraints should be standard equipment were asked if manufacturers should be required to offer those restraints as options, 84 percent answered affirmatively.

Of the two surveys, only the IIHS survey directly queried the respondents about their preference for automatic restraints at various price levels. At a cost of \$100 over the cost of manual belts, 30 percent favored automatic belts over manual belts and at a cost of \$150, 25 percent did so. Similarly, at a

cost of \$100 for airbags 55 percent favored airbags over manual belts. The percentage fell to 47 percent at \$200 and 42 percent at \$350.

Both surveys asked about preferences for airbag requirements versus a safety belt usage law. The GM survey found that 28 percent would most like to see the combination of a belt usage law and a 65 mph speed limit on the Interstate System, 24 percent preferred airbags in all cars, and 16 percent favored a belt usage law by itself. To measure dislikes, the GM survey asked which requirement the respondents would least like to see enforced. Airbags were picked by 44 percent, a belt usage law by 14 percent, and the combination of a belt usage law and a 65 mph speed limit by 11 percent. The IIHS survey showed a preference of 2 to 1 in favor of an airbag requirement over a belt usage law. The results of both surveys in these areas were at least in part due to the particular information provided the respondents and to the wording of the questions.

The Department does not believe that it is necessary to resolve the dispute between the commenters over the precise role of public acceptability in establishing safety requirements. The nature and significance of public acceptability issues varies greatly depending on the particular factual circumstances of individual rulemakings. Since *Pacific Legal Foundation v. DOT*, it has been beyond dispute that public acceptability must be considered in rulemaking under the Act. The Department agrees that public acceptability involves more than considering consumer preferences. As Allstate noted, if preferences alone were a controlling factor, then that would call into question the current provisions under which manual belts are installed in new cars. However, the Department also agrees that behavior other than disabling occupant restraint systems may be relevant in considering public acceptability. The Department believes that its consideration of public acceptability would satisfy whatever definition might be applied in assessing its actions.

Based on the likelihood that the car manufacturers will install detachable automatic belts, or airbags instead of nondetachable automatic belts, the Department does not believe that there will be a significant reduction in benefits due to persons disabling automatic restraints. Neither the detachable automatic belt nor the airbag have the intrusive or coercive qualities that the combination of manual belts and ignition interlocks had in 1974. However, the Department recognizes the need for the public to become accustomed to the technology and the need for protection, and believes that an across-the-board mandate too quickly could engender adverse public reaction. The Department's decision to gradually phase in the requirements of this rule will help build public acceptance of this rule. Additionally, although the added costs of automatic restraints will theoretically have some effect on new car sales, those effects, as discussed in the FRIA, would not be substantial.

Costs and Lead-Time for Occupant Protection Systems

Equipment

General. Table 8 provides the Department's estimates for the incremental increase in equipment and fuel costs and required lead-time for automatic belts and airbags. The increment is the cost over that of the current manual lap/shoulder belts. The Department estimates that installation of airbags in compact and larger cars would require 3 to 4 years lead-time and automatic belts in all cars would require 2 to 3 years; installation could begin sooner for a small fraction of annual production, and is likely to take even longer for airbags in small cars. Greater detail on the estimates is provided in the Department's Final Regulatory Impact Analysis.

Table 8.—Per Vehicle Cost Impacts

	<u>Incremental cost</u>	<u>Lifetime energy costs</u>	<u>Total cost increase</u>	<u>Required leadtime (months)</u>
Manual belt system	Base			
Automatic belt system (2 pt or 3 pt nonpower high volume)	\$ 40	\$11	\$ 51	24-36
Air bag—driver only (high volume) ...	\$220	\$12	\$232	36(1)
Air bag—full front (high volume)	\$320	\$44	\$364	36-48(1)

(1) For compact-size and larger cars.

The costs of manual and automatic belts and airbags are based on tear down studies and comments to the docket. The cost for belts are believed to be typical of high volume production costs; the estimates for airbags are based on production of 1 million units, which is believed to be representative of full production system costs if airbags were widely used.

Table 9 presents industry estimates on costs and lead-time. It shows investment costs separately because of its effect on cash flow. Investment costs are not, however, additive to equipment; they are already included in equipment costs.

Table 9.—Industry Statements* Incremental on Costs of Occupant Restraint Systems and Lead Time (1983 Dollars)

	Equipment cost to consumer per vehicle (dollars)			Investment costs** (millions of dollars)		Fuel cost (pounds)		Lead time (months)	
	Auto-matic belts	Airbags		Auto-matic belts	Airbags	Auto-matic belts	Airbags	Auto-matic belts	Airbags
		Driver	Full Front						
GM	45	510(2)	838(2)	125	\$573(8)	0	56	36	36
Ford	—	—	807(2)	—	—	25	40	36-48	48
Chrysler	115	500(1)	800(1)	37	89(8)	—	—	36	36-60
AMC	—	—	—	—	—	—	—	30-36	36-42
Mercedes	—	880(3)	—	—	—	—	—	—	—
Renault	200	—	1,000(7)	1.5	—	—	—	24	36
Jaguar	150	900	1,800(7)	—	31	—	35	—	—
VW	—	—	—	—	—	7	—	48	—
SAAB	—	—	—	—	—	—	—	30	58
Nissan . . . 130-150	—	—	—	—	—	—	—	30-42	—
Honda . . . 150-170	—	—	—	5	—	—	—	36-48	—
Mazda	—	—	—	—	—	—	—	36	36
Peugeot	380	—	—	—	—	—	—	36	36
Am. Seat Belt Council	—	—	—	—	—	—	—	24	—
AOPA	—	—	185(4)	—	—	—	—	18-30	18-30
Breed	—	45(4)	141(4)	—	—	—	—	18	—
Lohr	45	—	—	Little	—	—	—	—	—
Romeo Kojyo	—	150(6)	—	—	—	—	—	—	—

(1) At 1 million units.

(2) At 3 million units.

(3) At 200,000 units.

(4) At 2 million units.

(5) Includes pre-tensioned passenger belts plus driver lap/shoulder belt.

(6) Retrofit; does not include installation.

(7) Estimate.

(8) For driver only airbags. GM said that installment costs would be \$428 million and Chrysler said \$12 million.

* A "—" indicates no data was submitted or the commenter claimed it was confidential.

** Already included in equipment costs. Also shown separately because of effect on cash flow.

Manual Lap and Shoulder Belts. Based on Departmental analyses, the increase in a new car's price attributable to the addition of a manual lap and shoulder belt to the front outboard seating positions and a manual lap belt to the front

center position is approximately \$64, based on a production volume of one million units per year. The added weight for the manual belt would increase fuel usage at a cost of \$22 over the life of the car.

Industry estimates for the cost of existing manual seatbelts ranged from \$50 (Honda and Peugeot for 2 seating positions) to \$90 (Nissan for 2 positions). GM and Chrysler said seatbelts for 3 positions cost \$65 (GM said \$59 for 2 positions).

Automatic Belts. For the various designs of automatic belts having a fixed anchorage on the door, the increase in a new car purchase price over that for a car with manual seatbelts has been estimated at \$40. Added fuel costs over the life of the car would be \$11. Some manufacturers may offer motorized belt systems, such as Toyota currently offers in its Cressida. Incremental cost increases for such systems are estimated by manufacturers to be as high as \$300 to \$400, but the NHTSA teardown study of the Cressida system shows incremental consumer cost increases of only \$115 for such systems. Although motorized systems may lead to higher usage levels because of their convenience, they were not required under FMVSS 208 prior to its rescission in 1981, and are not required by this amendment to the rule.

Of the major automakers, only GM provided a detailed cost estimate in its comments to the rulemaking docket. GM's estimate was for a high volume, four-door sedan with two front seats and 3-point detachable automatic belts with single door-mounted retractors. No provision was necessary for knee bolsters. Their estimate, as well as that of an experienced cost estimator (Lohr) was \$45, similar to our estimate of \$40. The NHTSA tear-down studies of the Rabbit and Chevette systems, including modifications to fit other cars, yielded costs of \$11 to \$34. Other manufacturers' estimates are higher than NHTSA's because of "extras" (i.e., equipment not required under FMVSS 208; providing manual lap belts with 2-point automatic belts, knee bolsters with 3-point belts or extra retractors to "hide" detached automatic belts) and different

assumptions about markups (profit and overhead) over actual variable costs.

The NHTSA teardown studies were adjusted to account for a mix of 2- and 3-point belts as well as for provision of items not (1) required by the standard, but which could increase usage or safety. Two items that fit in the latter categories are motorized systems and the provision of manual lap belts with 2-point automatic belts. These additions increase the teardown study estimates to \$40.

The NHTSA estimate of incremental weight associated with automatic belts is 5 pounds. This compares with GM's estimate of no increase in weight with such systems, VW's estimate of 7 pounds and Ford's 25 pound estimate. Assuming an equal increment of secondary weight, NHTSA estimates that the total 10 pound weight increases would result in \$11 extra in fuel consumption over the vehicle's lifetime.

Airbags. The Department estimates that the vehicle price increase resulting from the installation of airbags in all three front seating positions of cars would be \$320 over the cost of a car with manual lap and shoulder seatbelts, based on a production volume of one million units. The replacement cost for a deployed airbag is estimated to be \$800. There would also be a fuel penalty of \$44 over the life of the car, above that for a car with manual lap and shoulder belts. The cost for a driver-only airbag and lap belt is estimated to be \$220, plus a \$12 fuel penalty.

The price of airbags is sensitive to volume changes. At annual volumes of less than 300,000 units, full front airbags may cost anywhere from \$400 to \$1,500 per car. For volumes of 10,000 units per year or less, the latter figure is most representative. A successful, all mechanical airbag system (such as the Breed system) may reduce the unit price of a full front airbag system to about \$250 at an annual volume of one million units.

NHTSA's airbag tear-down study involved in 1979 Ford and a 1981 Mercedes Benz driver and passenger airbag system. The systems were disassembled into their component parts and, using automotive engineering cost estimating techniques, a NHTSA contractor estimated a variable or "piece" cost of each component exclusive of any fixed overhead expenses incurred in the production of airbag systems. These estimates are similar to those supplied by the actual airbag manufacturers through their association. The estimates that were developed include our best estimate of the cost of required vehicle modifications. The estimates also include certain component modifications suggested by the contractors for high volume production. Estimates were developed for annual production volumes of 300,000, 1,000,000 and 2½ million for both systems. In arriving at a unit retail price, unit variable costs were marked up by a factor of 1.33 to arrive at "wholesale" or "dealer" cost and a dealer discount of 12 percent was assumed.

The difference between the Department's estimates and industry's estimates is basically due to differences in design and pricing assumptions. For example, one major cost difference involves the price of the diagnostic module and associated electronics. In its comments to the docket, Ford indicated that it believes that military specification grade electronics are necessary in view of product liability considerations; we have assumed that automotive grade electronics will suffice although we recognize that initially, manufacturers may resort to military specification grade electronics until the reliability of automotive grade electronics is proven sufficiently. Significant differences also exist in the number of required crash sensors, module costs (NHTSA used supplier quoted costs) and vehicle markups. The Department also found the estimates provided by the major U.S. major manufacturers for driver-only airbag costs difficult to justify at their stated volumes. For example, even recognizing that there are vast differences in basic design between Mercedes and GM vehicles, Mercedes

appears to be charging its customers a price 25 percent higher than GM's estimate for a driver-only system even though the Mercedes system is optional and sold on an annual volume which is 42 times lower than that estimated by GM.

Other Occupant Protection Technologies. Costs for other technologies are currently unavailable.

Investment

Investment costs, which are defined as outlays for property, plant, machinery, equipment, and special tools to be used in the production of automatic occupant restraint systems, are estimated to be \$1.3 billion if airbags were required in all new cars and \$500 million if automatic belts were required. These estimates are for the multi-year period prior to full implementation of an automatic restraint requirement. Industry's estimate for these expenses are contained in Table 9.

The implementation of automatic occupant restraint requirements should not substantially alter the magnitude of planned capital spending over the next several years, since domestic manufacturers alone are investing nearly \$10 billion annually.

Insurance

If airbags were required in all automobiles, collision and property damage liability insurance policies would have to absorb additional costs for replacing deployed airbags, for the value airbags add to vehicles that are "totaled", and for the added cost that would result when some damaged vehicles are considered "totaled" instead of repairable because of the added cost of replacing the airbag. The Department estimates that the maximum expected loss, because of a requirement for airbags, in the entire automobile fleet, that would be borne by collision insurance policies would be approximately \$177 million per year. For property damage liability policies, the cost would be \$118.2 million.

Comprehensive insurance policies will also have to absorb additional costs for the value that airbags add to vehicles that

are stolen or damaged by such things as fire and flood. The cost to insurance companies for these vehicles would be increased by the average depreciated value of airbags in the vehicles. The Department estimates that the maximum loss that would be covered by this insurance would be approximately \$55 million per year.

These additional losses from airbags may cause annual premium increases, per insured vehicle, of about \$2.60 per vehicle per year or \$16.60 over a vehicle's lifetime. Table 10 shows these costs.

Table 10.—Summary of Potential Automobile Physical Damage Premium Costs Resulting From Airbags (1982 Dollars)

	Per insured vehicle annual cost	Per insured vehicle lifetime cost	Per vehicle annual cost	Per vehicle lifetime cost	Total annual costs (millions)
Collision	1.90	13.45	1.31	8.85	177.2
Property damage liability94	6.35	.88	5.95	118.1
Comprehensive	<u>.54</u>	<u>3.65</u>	<u>.41</u>	<u>2.77</u>	<u>55.4</u>
Total(1)			<u>2.60</u>	<u>17.57</u>	<u>350.7</u>

(1) No total is provided for per insurance vehicle figures because each type of insurance covers a different number of vehicles. The addition of these numbers would therefore be meaningless.

Economic Impact

In response to the comments about the potential economic impact of any rulemaking, the Department's analysis indicates that, with a labor force of over 115 million projected for the mid-1980's, it would be difficult to conclude that a restraint system costing the consumer no more than \$500 would result in any measurable impact on national employment. Any perceptible effect on GNP is unlikely. Finally, as to the consumer price index, the Bureau of Labor Statistics generally considers higher consumer costs due to safety equipment as quality improvements, not inflationary increases, having no

effect on the consumer price index. The projection of effects on the GNP and the price index have one thing in common: the relative changes are small. Long-term effects on auto sales are expected to be minor and auto industry revenue and employment would be expected to *increase*. In any event, any significant changes would result only from an all airbag requirement, not from the installation of automatic belts.

There are also positive economic benefits associated with automatic occupant protection. Based on the previously mentioned estimates of lives saved and injuries avoided (see Table 5), and the economic losses associated with those casualties as contained in a recent NHTSA study, "The Economic Cost to Society of Motor Vehicle Accidents" (January 1983), as much as \$2.4 billion in annual economic losses could be avoided by requiring automatic protection. Although we do not wish to—and cannot—place a value on human life or injury, there are some costs associated with those deaths and injuries that can be measured, and only these are included in the study. Because they do not include such things as pain and suffering or loss of consortium, they will obviously understate total benefits of the life saving and injury reducing potential of occupancy restraint systems.

V. Analysis of the Alternatives

General

Introduction

Numerous alternatives have been considered as part of the response to the Supreme Court decision on automatic occupant restraints. Before analyzing each of the specific alternatives, this portion of the paper first looks at some of the general pros and cons of each automatic protection system. It also discusses the pros and cons of other general features of many of the alternatives: a demonstration program, mandatory state seatbelt use laws, legislation to require that the consumer be given the option of buying an automatic restraint system,

airbag retrofit capability, passive interiors, and the center seat issue.

Airbags

Airbags offer a distinct advantage over other occupant restraints in that they ensure a usage rate of nearly 100 percent for both drivers and passengers. Used alone, they do offer protection, but to equal the effectiveness of a manual lap and shoulder belt, airbags must be used with lap belts. Lap belts in airbag equipped cars would probably be used only at a level near the current level of seatbelt use, 12.5 percent. Because manual belts use is so low, however, airbags would provide much greater safety benefits.

Airbags with lap belts also provide protection at higher speeds than safety belts do, and they will provide better protection against several kinds of extremely debilitating injuries (e.g., brain and facial injuries) than safety belts. They also generally spread the impact of a crash better than seatbelts, which are more likely to cause internal injuries or broken bones in the areas of the body where they restrain occupants in severe crashes. However, the airbag does not provide protection at less than ten-twelve miles per hour, nor does it provide protection in rollover or rear-end crashes. Its level of effectiveness in side crashes is uncertain, hence the large range of effectiveness estimates for airbags. To attain protection in these non-frontal crashes, a lap belt, or lap/shoulder belt must be worn.

Full front airbags also can provide protection for the center seating position. No other automatic restraint system can do this, because, as with manual seatbelt systems, a shoulder belt cannot practicably be offered for the center seat.

The use of airbags would overcome possible public objections to the obtrusiveness of continuous automatic belts, lessen concerns about entrapment and avoid problems of shoulder belt comfort and convenience. Although there are significant public concerns about the alleged hazards associated with

airbags, the Department believes that many of these (e.g., inadvertent activation, sodium azide, and lack of assurance that they work when needed) are unfounded.

The public might also be very concerned about the cost associated with airbags—especially current belt users who may argue that they would be getting very little additional protection at much greater cost. The cost of airbags is one of their biggest disadvantages.

One problem with respect to costs is the wide disparity between the Department's cost estimates and industry's. Although the Department can explain its estimate and the reasons for the differences, it cannot control the price at which the system is offered to the consumer. Thus, although the Department believes full front airbags need cost no more than \$320, they could, especially in the near term, cost much more, since airbag costs are very sensitive to production volume. Any alternative that does not result in the use of a large number (for example, 300,000) of airbags may result in their per unit costs being very high.

Repair shop owners have raised concerns about their potential liability if an automobile's airbag fails to work after repair work was done on the car, the Department believes this concern is overstated: the introduction of an airbag into an automobile is no different from the introduction of other safety features that may not work after repair work is done on an automobile. Moreover, the insurance companies have indicated in their testimony and docket comments that there would be very little if any increase in premiums to provide insurance protection against such risks. Indeed, some insurance companies testified that product liability claims should decrease with automatic restraints. The expected reduction in deaths and injuries should result in fewer claims, for example, alleging that the brakes or steering were defective. Although some consumers might view airbags as a panacea and bring

suit if subsequently injured, such "nuisance" suits are unlikely to be successful and, thus, should be short-lived.

Concerns were also raised about the dangers of sodium azide, the gas generant in most airbag systems. The sodium azide pellets are hermetically sealed and the potential of exposing motorists to a harmful dose is remote. Additional concerns involved the dangers posed by persons tampering with unfired sodium azide canisters and by the scrapping of cars with unfired canisters. While the Department believes that disposal problems can be resolved, further action on this issue is required, and the Department will work with automobile manufacturers and scrappers to ensure the safe retirement of airbag equipped vehicles. Although it is possible that individuals may tamper with or try to steal an unfired sodium azide canister, the Department believes that this is highly unlikely. The amount of sodium azide contained in the canister is small and it is more readily available through other sources. Other items in the automobile—antifreeze, gasoline, battery acid, or flares—are either more poisonous or explosive.

Dealers are also concerned that car sales will decline with an all airbag fleet. They fear that potential buyers may stay out of the market, hoping to buy in later model years when an all airbag decision would have been overturned by subsequent agency or congressional action. However, as discussed in the FRIA, the price increases associated with an all airbag, new car fleet, would, at most, result in one to three postponed sales per dealership. In the long term, lost sales would not on average, be expected to exceed one per dealer. Since airbags are not being required by this amendment to FMVSS 208, a consumer need not purchase an airbag-equipped vehicle unless he or she so desires. Thus, there should not be any reduction in sales resulting from the fact that airbags are one of several systems made available to consumers.

Another concern involves the technical problem of out-of-position occupants in small cars. The out-of-position occupant

problem primarily affects children less than three years old. (The size of the child and the speed with which the bag must open in small cars are the primary reasons for the problem.) Overall, the safety benefits are greater for an out-of-position occupant with an airbag than without one. Moreover, technical modifications (e.g., sensors that could detect an out-of-position occupant and adjust the opening of the airbag to account for the occupant's position) and child restraint laws should lessen the problem. Nevertheless, the Department can not state for certain that airbag will never cause injury or death to a child. This situation is similar to current safety belts where the benefits are well-known, but they do on occasion cause injuries that otherwise would not have occurred. Again, the Department is not mandating the use of airbags.

In addition, manufacturers have commented that space limitations in small cars would inhibit the installation of current airbag systems and adversely affect their effectiveness. While this problem can be resolved, more time would be needed. At least four years lead time would be needed if airbags were required in small cars.

Still another issue is raised by some manufacturers who contend that tests required under the rule are not sufficiently repeatable to enable manufacturers to assure themselves of compliance. They argue that they get too wide a variation in results when they test the same automobile under the test procedure. To protect against some cars not passing the test, they say they will have to design the restraint systems to a more stringent standard than should be necessary. Although difficulties in the testing procedures are still of concern to the manufacturers, we believe that the testing device and testing procedure have matured greatly in the last decade. Furthermore, based on the result of NHTSA's NCAP tests, most cars (albeit with manual belts) already meet the injury prevention criteria of FMVSS 208, at 35 mph—a 36 percent more severe crash than required by the standard (which is a 30 mph test). Compliance by airbags is even less of a problem since the

injury levels of the test dummy tend to be well below the maxima of the standard (much lower than for belt systems), providing a large margin of safety. In summary, we do not think that test repeatability is such a severe problem as to preclude an airbag or other occupant restraint standard, although the Department will subsequently address possible improvements in this area.

Some people are concerned that the failure to issue a rule that will result in at least some airbags being placed in automobiles might mean the end of the development of airbag technology. In this regard, it must be remembered that some improvements—such as those made by the Breed Corporation—have come about without regulation. Moreover, four manufacturers are currently planning to offer driver-only airbags in their automobiles, even though not required. It is, therefore, possible that others may follow suit to meet the competition. Most important, the Department believes that this rule will result in the use of airbags in a far larger number of automobiles than is the case today.

It should be noted that improvements are possible in the airbag system that might overcome some of the remaining problems. For example, the airbag system being developed by Breed might make airbags available at less cost than current airbag systems.

Some may argue that consumer fears and dislike of airbags may come close to generating a level of public disapproval equivalent to the seatbelt interlock system. On the other hand, the unobtrusiveness of the system may result in the airbag generating the least disapproval.

Nondetachable Automatic Seatbelts

The usage rate for nondetachable automatic belts should be higher than that for manual belts, but some people will certainly find them uncomfortable, cumbersome, and obtrusive. Others will fear entrapment. Although they are much less costly than airbags and not much more expensive than

manual seatbelts, these concerns with nondetachable belts might hamper automobile sales.

Finally, it is possible that, in an emergency, people may find nondetachable belts harder to get out of than detachable belts. Although data do not exist on this issue, the Department has long expressed concern about the possibility that an unfamiliar egress mechanism could impede emergency exit. In the early 1970's, DOT issued a rule requiring all automatic belts to be detachable to permit emergency exit. Even in a later amendment in 1978 allowing the "spool-release" feature on continuous belts, NHTSA continued to express some concerns about ease of exit in case of emergency. The Department believes, however, that current designs of continuous belts will not create a safety problem.

Perhaps the most serious concern with respect to nondetachable belts is that the public's dislike of them may lead to defeat of the system (e.g., by cutting the belt). A number of surveys have found that 10-20 percent of the public might do so. This would result in not only the original owner but subsequent owners and passengers being deprived of any occupant restraint system. Since the average car has two to three owners during the useful life, belt availability could decrease to nearly 50 percent for a 10-year old car.

Nondetachable belts are probably the most coercive type of automatic restraint. Combining this with the fears of entrapment and the concerns over obtrusiveness could cause enough public clamor to result in the same type of problem that arose out of the interlock requirement in the mid 1970s when Congress forbade the Department from requiring that device. (In the NHTSA authorization bill of 1980, which barely failed enactment, there was a provision to ban nondetachable seatbelts.)

Nondetachable belts would also force manufacturers to eliminate the center front seat (by the use of bucket seats and consoles). There is no commercially developed technology to

provide an automatic belt for the center seat: even if it were exempted from the requirement for an automatic restraint, occupants would have a difficult time getting by the nondetachable belts to reach the center seat.

Another problem with nondetachable belts is that they make it difficult to install a child restraint seat properly.

Detachable Automatic Seatbelts

Detachable belts should alleviate some consumer concern about automatic belts and government involvement in the consumer's decision about belt usage. Although it is easy not to use the automatic feature (be detaching the belt and leaving it stowed), the availability of the automatic feature would make it easier to overcome some of the problems of manual seatbelt usage.

Detachable belts would also be only slightly more expensive than manual belts, but the additional expenditure would be made for what are likely to be relatively small safety benefits, if usage does not increase substantially over that for manual belts. In this regard, however, it must be remembered that NHTSA rescinded the automatic restraint requirement in 1981 because it found that detachable automatic belts would be installed in most cars and thought that those belts might not increase belt usage enough to justify them. The Supreme Court, in reviewing this action, then found that the evidence in the record indicated a possible doubling of usage with automatic belts. The Court also said that the inertia factor provided grounds for believing that seatbelt use by the 20-50 percent who wear their belts occasionally would increase substantially. The manufacturers also now agree that detachable belts will increase usage, at least initially.

Demonstration Program

Although we may gain more data on usage and effectiveness, the main purpose of a demonstration program would be to obtain detailed data on the issue of public acceptability of

automatic occupant restraints. To the extent consumer purchases under a demonstration program would be voluntary, data that were gathered on usage or effectiveness would be too small to determine the reaction of the general population under an automatic occupant restraint mandate. To obtain statistically reliable data within a reasonably short period of time, a large number of automobiles would have to be included in the program. If such a program were to be conducted, the Department believes that it should include provision for producing at least 500,000 cars per year over a four year period with airbags, detachable and nondetachable automatic belts. The three types of automatic restraints would be divided evenly among the cars produced. This should provide statistically reliable results in four to five years from the date the first car is sold. (If the program is limited to airbags, 250,000 cars should be manufactured per year over a four year period. This would provide results in about 4 to 5 years.) The program could be conducted in essentially the same fashion as envisioned by Secretary Coleman when he announced his plans in 1976 to conduct a demonstration program. At that time, the Department negotiated contracts with four car manufacturers for the production of up to 250,000 automatic restraint equipped cars per year for model years 1980 and 1981.

During our recent public hearings, Ford indicated support for a mandatory demonstration program. Other manufacturers are receptive to a voluntary program, but only as an alternative to an automatic restraint requirement, and only under several conditions regarding the manufacturers' freedom to choose the type of restraint and model test procedure changes, etc. Several manufacturers would not voluntarily participate in any demonstration program.

Three methods could be considered for conducting a demonstration program: (1) A voluntary contract program such as that suggested by Secretary Coleman; (2) use existing National Traffic and Motor Vehicle Safety Act authority to mandate

such a program; and (3) seek Federal legislation. A mandated demonstration program would be difficult to justify under the Safety Act. Ford believes that such authority exists but the Department thinks that new legislation would be necessary. It is unclear whether Congress would provide the necessary legislation or any funding that might be required. Moreover, the time necessary to obtain any legislation would have to be added to the time necessary to conduct an effective program. There also may be serious objection to a demonstration program after so many years of attempted rulemaking, and especially so many years after Secretary Coleman's efforts.

Mandatory State Safety Belt Usage Laws

A number of analyses of seatbelt use in countries that have mandatory use laws show that such laws do increase usage. Survey results, based on responses from officials in foreign countries, show that when seatbelt usage was required and the requirement was properly enforced, usage increased dramatically and remained high. Tables 11 and 12 clearly illustrate these dramatic increases. Table 11 provides data available to the Department on 17 nations that have passed MULs; the table shows the difference in usage rates before and after the enactment of MULs. In addition, a number of Canadian provinces have enacted MULs. Those provinces and the data on their experience are contained in Table 12. (More detail on the information in these tables can be found in the FRIA.)

Table 11.—Changes in Seat Belt Usage Rates Under Mandatory Use Laws

<u>Country</u>	<u>Effective date of law</u>	<u>Belt usage</u>	
		<u>Before</u>	<u>After</u>
Australia . . .	January 1972	30 percent	78-87 percent
New Zealand . .	June 1972	40 percent	89 percent
France	July 1973	20-25 percent	95 percent highways 75 percent country roads 50 percent night in cities

**Table 11.—Changes in Seat Belt Usage Rates Under
Mandatory Use Laws—Continued**

<u>Country</u>	<u>Effective date of law</u>	<u>Belt usage</u>	
		<u>Before</u>	<u>After</u>
			35 percent day and night in built up areas
Puerto Rico	January 1974	5 percent	14 percent
Sweden . . .	January 1975	22 percent	75 percent
Belgium . . .	June 1975	17 percent	87 percent
Netherlands	do	11 percent urban	58 percent urban
		24 percent rural	75 percent rural
Finland . . .	July 1975	30 percent highways on weekdays	68 percent highways on weekdays
		9 percent urban traffic	53 percent urban traffic
Israel	do	6 percent	70 percent
Norway . . .	September 1975	13 percent urban	77 percent urban
		35 percent rural	86 percent highways
Denmark . .	January 1976	25 percent	70 percent
Switzerland	January 1976 (repealed October 1977)	19 percent city streets	75 percent city streets
	Reenacted November 1980	35 percent highways	81 percent highways
		42 percent expressways	88 percent expressways
West Germany	January 1976	55 percent autobahns	77 percent autobahns
		32 percent country roads	64 percent country roads
		20 percent city streets	47 percent city streets
		33 percent weighted average	58 percent weighted average
Austria	July 1976	10 percent urban	20 percent urban
		25 percent rural	30 percent rural
South Africa . . .	December 1977	10 percent	62 percent
Ireland	February 1979	20 percent	45 percent
Great Britain . .	January 1983	40 percent	95 percent

Table 12.—Changes in Driver Seat Belt Usage in Canada Under Mandatory Use Laws

<u>Province</u>	<u>Effect date of law</u>	<u>Use before (percent)</u>	<u>Use in 1983 (percent)</u>
Ontario	1-76	23	60
Quebec	8-76	18	61
Saskatchewan	1-77	32	54
British Columbia	10-77	37	67
Newfoundland	7-82	9	76
New Brunswick	6-83	4	68
Manitoba	1-84	12	12
Averages weighted by traffic counts at data collection sites			
Provinces with mandatory use laws			61
Provinces with no mandatory use laws...			15
Unweighted average usage before laws passed (Excl. Manitoba)		21	

The data in these two tables clearly illustrate the significant effect MULs have on seatbelt usage. As Table 11 shows, usage rates ranged from 5 to 40 percent before MULs went into effect, and from 14 to 95 percent after enactment. Usage typically at least doubled and in some cases increased three times or more. The average usage for the 17 countries in the table was 23 percent before mandatory belt usage and 66 percent after, an increase of 43 percentage points.

The Peat, Marwick, Mitchell and Company (PMM) study from which most of the data included in Table 11 were obtained concluded that the main factors that influence the frequency with which individuals wear their seatbelts under MULs are: (1) The level of enforcement applied by the police; (2) the natural propensity of individuals to be law abiding; and/or (3) the individual's personal perspective regarding their own safety.

Given the geographical proximity of Canada to the U.S. and the many similarities between our societies, the Canadian experience with MULs is especially valuable. MULs are in effect in seven provinces in Canada, but, since Manitoba's did not go into effect until January 1984, data are not yet available

from that province. Usage rates before MULs went into effect for the six other provinces averaged 21 percent. Usage rates for those six averaged 61 percent in 1983. This is an increase of 40 percent under MULs. The PMM and other studies of MULs, which are more fully discussed in the FRIA, have concluded that success is dependent on how well the public is prepared for these laws, the severity of sanctions, and on the diligence of enforcement. For this reason, the Department has established criteria in the amended rule to ensure an appropriate level of educational, sanction and enforcement efforts.

The 1982 background paper on "Mandatory Passive Restraint Systems in Automobiles," prepared by the Congressional Office of Technology Assessment, stated that "Mandatory belt use laws are potentially the most effective approach to ensuring passenger restraint. Experience in other industrialized countries suggests that a mandatory law might result in usage rates exceeding those achievable with passive belts because so many passive belts would be detached. Nevertheless, in today's political climate in the United States, mandatory seatbelt-use laws seem unrealistic." The Department agrees with the potential for belt use laws, but feels that the political climate and public attitudes have changed significantly since then, making the possibility of enactment of such laws considerably higher.

Currently, one state legislature, New York's, has passed a mandatory use law which provides for a \$50 fine, allows waivers for medical reasons only, and requires the Governor to conduct a public education program in conjunction with the law. Eleven other states are reported as actively considering seatbelt usage laws.

A number of statewide and nationwide surveys have been taken in the United States to determine the public acceptability of mandatory state belt use laws. Surveys taken in 1979 or earlier generally indicate that the public is strongly divided on mandatory seatbelt use laws. However, public

attitudes about automobile safety have changed markedly over the past few years, in part because of the grass roots uprising in opposition to drunk driving. The public now strongly supports laws and innovative enforcement action to reduce the needless deaths and injuries caused by drinking and driving. This movement has spilled over into other highway safety areas such as safety belt and child safety seat usage. Evidence of this attitudinal change can be seen in the fact that 46 states and the District of Columbia have enacted child safety seat laws since the beginning of 1981 (bringing the total to 48), the New York State Legislature's recent enactment of the adult MUL law, and the significant progress made toward the enactment of MULs in other states—notably Illinois, Minnesota, and Michigan. Recent surveys taken by several states found 66 percent in favor of mandatory belt usage laws in Michigan, 69 percent in Delaware, 52 percent in New York, and 56 percent in Ohio.

Many of the commenters who support such legislation stress the need to have public education programs before the actual enactment of the laws and Federal incentive grants as an effective impetus to stimulate the states. Indeed, the success of the mandatory law in Great Britain can be attributed to an intensive public information and education program conducted during the two preceding years before enactment of the law.

Legislation To Require Consumer Option

This option would ensure that consumers were given the widest possible choice of both whether to purchase an automatic occupant restraint and, depending on the requirement, what type of automatic restraint. Unlike the current market situation, those who wish to purchase an automatic occupant restraint system could do so. This would probably not be as effective in generating safety benefits as a requirement for automatic restraints in all cars. Those drivers who are involved in more serious accidents are probably the ones least likely to

purchase such systems. Depending on how "controlling" the legislation that was adopted was, numerous other problems could develop. For example, dealers might not stock vehicles with automatic restraints, requiring consumers to wait a long time so as to "force" many people to purchase manual safety belts. In addition, the small number of automatic restraints produced under this alternative would likely mean high prices per unit due to a lack of economy of scale. There also would be significant costs imposed on manufacturers because of extra design and tooling costs, if it were necessary to provide more than one type of automatic restraint for each model. As a result, the overall costs for manufacturers and consumers might far outweigh the benefits, and if an insufficient volume of different types of restraints were produced, there might not even be enough data to permit further evaluation of the different types of systems.

Airbag Retrofit Capability

Requiring an airbag retrofit capability would make it easier for owners of automobiles to have airbags installed in their cars in the "aftermarket." It would also allow purchase of an airbag by a second or third owner, if the original owner failed to purchase one. This would be especially valuable if systems like Breed's airbag eventually proved successful. However, it could be argued that only the more safety conscious consumers are likely to purchase such airbags; the high risk drivers might not take advantage of the option. In addition, all automobiles would become more expensive, even if the airbags were installed in relatively few cars, and the cost of airbags could be very high if they are purchased in low volumes that do not permit economies of scale. Moreover, this alternative would not ensure that airbags would be available to consumers who wish to have them installed.

Passive Interiors

GM has been doing research to develop "passive interiors"—to build in safety by improving such things as the

steering columns and padding. It believes this would be better than automatic occupant restraints and contends that it cannot afford to do both. Although an attractive alternative, this approach is still being developed, and even GM is not willing to say that it will meet FMVSS 208 in the immediate future. Moreover, FMVSS 208 does not require airbags or automatic belts; GM's passive interior concept is an acceptable compliance method, which should be encouraged. It holds the promise of being a low cost, nonobtrusive method of complying with the standard.

GM also asked that the Department consider dropping the barrier standard from 30 mph to 25 mph for passive interiors. The Department has virtually no data on what diminution in safety would occur if the lower standard were to be used. Thus, it has no basis for making such a change.

Nevertheless, the Department encourages further research in this area. From the limited test data available, it is generally evident that it is within the state-of-the-art to pass FMVSS 208 criteria at 25 mph (using unrestrained Hybrid III dummies). General Motors, in their docket submission, indicated that the Oldsmobile Omega and the Pontiac Fiero have passed the injury prevention criteria of FMVSS 208 at 30 mph. Nissan engineers indicated in 1974 that the 260Z would come close to meeting the FMVSS 208 criteria at 25 mph. In a NHTSA test of a Ford Crown Victoria, the driver dummy's performance met the FMVSS 208 injury criteria in a 30 mph barrier test. However, even though these vehicles met the FMVSS 208 criteria, none of the manufacturers have expressed confidence in their ability to so certify to the government. Nonetheless, the Department remains optimistic about further development of this technology.

Center Seating Position

Intertwined with most of the alternatives is the issue of what to do about the center seating position. Automatic seatbelts (and even 3-point manual belts) cannot be used for the center

seat. As a result, the only automatic protection available for front center seat occupants is an airbag or passive interiors. If automatic seatbelts were used to comply with a requirement for automatic occupant restraints, the center seat would have to be eliminated as an occupant position, unless it were exempted from coverage. Moreover, even if it were exempted from coverage, if nondetachable belts were required, occupants would have a difficult time getting to the center seat. Finally, even if airbags were used to meet a requirement for automatic restraints, at least one commenter (Ford) indicated that the center seat position might be eliminated due to the problem of out-of-position occupants.

If the center seat were exempted from coverage and detachable belts (or airbags) were used to provide automatic protection for the outboard seats, the center seat could still be used because the automatic belts are detachable. If they are detached to let a passenger sit on the center seat, the question then arises as to how often they would be reattached. In this regard, a recent study by Market Opinion Research is noteworthy. It indicated that the interaction between the driver and the passengers was a significant factor affecting belt usage; i.e., if the driver wore a belt, this made it more likely that a passenger would. Since passengers normally enter the front seat from the passenger side of the automobile, the driver's automatic belt would not have to be disconnected for them to enter. Therefore, if the driver does not disconnect his belt, the fact that the passenger side automatic belt is disconnected to permit entrance to the center seat¹ may not have a serious adverse effect; since the driver is wearing his belt, it may encourage reconnection of the right front belt and/or the use of the center seat lap belt. Conceivably, center seat lap belt usage could increase compared to the expected usage in cars with only manual belts.

If the center seat were not exempted, the loss of the center seat would affect both manufacturers and consumers. In arguing for exempting the center seat, Consumer's Union and the

American Automobile Association pointed out that consumers would lose vehicle utility due to a reduction in the maximum seating capacity. Manufacturers could be affected if customers opt to purchase smaller cars if they lose the center seat in larger cars. This could cause a loss of profits, since larger cars yield more profit per unit than smaller ones.

The indirect safety effects are quite complex. Moving a child, for example, from the center seat to a back seat has the advantage of significantly improving the child's safety, but the disadvantage of possibly leading to a driver who may frequently turn around to check a child in the back seat. There are also fuel economy and safety implications, if two cars are necessary when one would have otherwise been sufficient for a particular trip. The issue is made even more complex by the fact that some center seat passengers may move to the right seat and others may move to the back seat, if the right seat is already occupied. The front right seat is statistically the least safe position in the automobile, but sitting in the back is slightly safer for adults than sitting in the front.

On the other side, only one-third of the cars sold in 1982 were six seat cars, and that number has been declining as cars are being downsized. (Recent trends, however, indicate some increasing consumer preference for larger cars.) An estimated 1.5 percent of front seat fatalities and injuries involve the front center seat occupant. Automatic restraints for the front center seating position would not yield as many benefits as when FMVSS 208 was originally imposed in 1977 and would not provide the same benefits per dollar spent as providing protection for the two outboard seats.

Although the center seat is rarely used, about one-third of its present occupants are children. For that reason, many are concerned about the equity of not providing automatic protection to this position. However, with child restraint laws becoming effective in 48 states and the District of Columbia, this argument loses a great deal of its merit.

Rationale for Adoption of the Rule

The Requirement for Automatic Occupant Restraints

The final rule requires, in accordance with the phase-in schedule, that automatic occupant protection be provided in passenger cars. The requirement can be complied with through any of the occupant protection technologies discussed earlier in the preamble, if those systems meet the testing requirements of the rule; i.e., manufacturers may comply with the rule by using automatic detachable or nondetachable belts, airbags, passive interiors, or other systems that will provide the necessary level of protection.

The requirement also only applies to the outboard seating positions of passenger cars. The center seat in those cars that have one is exempt from the requirement for automatic occupant protection. In addition, the requirement does not apply to other than passenger cars; for example, trucks, tractors, or multi-purpose vehicles such as jeeps are not covered by the rule.

The National Traffic and Motor Vehicle Safety Act of 1966, as amended, directs the Department of Transportation to reduce fatalities and injuries resulting from traffic accidents. In its decision in the *State Farm* case, the Supreme Court held that, in carrying out its responsibilities under the Safety Act, the Department "must either consider the matter further or adhere to or amend Standard 208 along the lines which its analysis supports" 103 S.Ct. at 2862. In a number of instances throughout its opinion, the Court indicated where it found NHTSA's 1981 rescission to be inadequately supported or explained. The Department has now completed its further review of this matter, giving special consideration to the Supreme Court's decision.

Based on this review, the Department has determined that the data presented in this preamble and more fully analyzed

in the Department's Final Regulatory Impact Analysis support the following conclusions:

- After assessing the data now available to it, the Department has revised its 1981 analysis concerning the likelihood of increased usage if automatic detachable belts are installed to meet FMVSS 208; it cannot project either widespread usage, or a widespread refusal to use such systems by automobile occupants.

- While it is clear that airbags will perform as expected in virtually all cases, it is also clear that the effectiveness of the airbag system is substantially diminished if the occupant does not use a belt. Consumer acceptability is difficult to predict, with the major variables being cost, fear, and the unobtrusiveness of airbags.

- Nondetachable automatic belts may result in sharply increased usage, but there may also be substantial consumer resistance to them.

- The installation of automatic occupant protection in passenger cars may significantly reduce both fatalities and injuries.

- The costs of the existing automatic restraint systems are reasonable, and the potential benefits in lives saved, injuries reduced in severity and costs avoided are substantial.

- Technologically, the systems are feasible and practicable.

Even if we assume the lower level of the range for the effectiveness of automatic belts (35 percent) and very little increase in usage (an increase of only 7½ percent over the current 12½ percent usage rate for manual belts places us at the 20 percent level used in Table 5), there still would be significant incremental annual reductions in deaths and injuries as a result of an automatic occupant restraint rule complied with entirely by the installation of belts; 520 fatalities and 8,740 moderate to critical injuries would be

prevented. Using the higher effectiveness figures (50 percent) and still only 20 percent usage, we would come close to doubling the benefits; 980 fatalities and 15,650 moderate to critical injuries would be prevented annually. If usage increases to 70 percent, 5,030-7,510 deaths and 86,860-124,570 injuries would be prevented annually.

With respect to airbags, even assuming low effectiveness and no use of lap belts, the record supports the conclusion they would provide significant incremental reductions in deaths and injuries. Airbags without a lap belt could save 3,780-8,630 lives and prevent 73,660-147,560 injuries each year. With lap belts used at the current manual belt usage rate (12.5 percent), the evidence in the record indicates that airbags could save 4,410-8,960 lives and prevent 83,480-152,550 injuries.

The potential reduction in fatalities and injuries that would result from automatic restraints could produce a corresponding decrease in funeral, medical, and rehabilitation expenses. A reduction in these expenses could, in turn, result in reductions in premiums for any insurance that covers them and a reduction in the burden on taxpayers of various medical, rehabilitation and welfare costs.

As discussed earlier, collision and property damage liability and comprehensive insurance policies will have to absorb some additional costs to the extent that airbags are used.

In attempting to provide any relationship between costs and benefits of occupant protection systems, three important points must be kept in mind:

- (1) The statute directs us to "reduce * * * deaths and injuries," and, in doing so, to consider whether the standard we issue "is reasonable, practicable and appropriate." The Supreme Court noted in the *State Farm* case that it is "correct to look at the costs as well as the benefits of Standard 208," 103 S.Ct. at 2873, but we should also "bear in mind that Congress intended safety to be the preeminent factor under the Motor Vehicle Safety Act." *Id.* (The Senate

Report said safety was "the paramount purpose". The House Report called it "the overriding consideration.")

(2) The net result of any calculations will only provide information on *measurable* benefits. They would not represent the full benefits of reducing fatalities and injuries because the Department cannot measure the intangible value of a human life or a reduced injury. It cannot adequately measure, for example, the value of pain and suffering or loss of consortium.

(3) The data developed on usage and effectiveness are not always precise and in many instances involve broad ranges. As a result, they can have an effect on figures derived from them and the various relationships that ensue.

With this in mind and recognizing that insurance premium reductions alone only identify a portion of the economic benefits resulting from an automatic occupant protection rule, it is interesting to note some breakeven points for the cost related to automatic belts using low and high effectiveness estimates. The breakeven point occurs when lifetime cost (retail price increases and additional fuel cost) equal lifetime insurance premium reductions. At the high effectiveness level, the breakeven point occurs at the 32 percent usage level. At the low effectiveness level, the breakeven point occurs at the 44 percent usage level. Thus, by increasing current usage by approximately 20-30 percent, automatic belts will pay for themselves simply based on estimated insurance premium reductions. Inclusion of non-insurance benefits would lower these breakeven points, perhaps significantly.

Although airbag systems do not attain similar breakeven points based just on insurance premium reductions, it is interesting to note that a significant portion of airbag costs would be paid for just by insurance premium reductions. The estimated lifetime cost of a full front airbag system is \$364, including increased fuel cost; the lifetime insurance premium

reductions are estimated to range from \$73 to \$158 assuming 12.5 percent usage of the lap belt.

By issuing a performance standard rather than mandating the specific use of one device such as airbags or prohibiting the use of specific devices such as nondetachable belts, the Department believes that it will provide sufficient latitude for industry to develop the most effective systems. The ability to offer alternative devices should enable the manufacturers to overcome any concerns about public acceptability by permitting some public choice. If there is concern, for example, about the comfort or convenience of automatic belts, the manufacturers have the option of providing airbags or passive interiors. For those who remain concerned about the cost of airbags, automatic belts provide an alternative. This approach also has the advantage of not discouraging the development of other technologies. For example, the development of passive interiors can be continued and offered as an alternative to those who have objections to automatic belts or airbags.

Because one manufacturer has already begun to offer airbags and three others have indicated plans to do so, the Department expects that airbags will be offered on some cars in response to this requirement. Moreover, the continued development of lower cost airbag systems, such as the system being developed by Breed, may result in their use in even larger numbers of automobiles. By encouraging the use of such alternatives to automatic belts through this rulemaking, the Department expects that more effective and less expensive technologies will be developed. In fact, the Department believes it is in the public interest to encourage the development of technologies other than automatic belts to reduce the chance that the purchaser of an automobile will have no other option. See 103 S. Ct. at 2864. Thus, the rule is designed to encourage non-belt technologies during the phase-in period. The Department's expectation is that manufacturers who take advantage of this "weighting" will continue to offer such non-belt systems should the standard be fully reinstated. It also

expects that improvements in automatic belt systems will be developed as more manufacturers gain actual experience with them.

Center Seat

The Department has also decided to exempt the center seat of cars from the requirement for automatic occupant protection. This has been done for a number of reasons described in more detail earlier in this preamble. First, limitations in current automatic belt technology would probably result in the elimination of the center seat for most cars if it were required to be protected. Balancing the loss of vehicle utility, and the numerous effects that this could have, with the limited number of occupants of the center seat and, thus, the limited benefits to be gained from protecting it, warrant exempting its coverage. It should be noted that different protection by seating position already exists as rear seat requirements differ from front seat requirements; the center front seat itself is already exempt from the requirement to provide shoulder belts. Thus, there is ample precedent for this action.

Mandatory Use Law Alternative

The rule requires the rescission of the automatic occupant protection requirement if two-thirds of the population of the United States are residents of states that have passed MULs meeting the requirements set forth in the regulation. The requirement would be rescinded as soon as a determination could be made that two-thirds of the population are covered by such statutes. However, if two-thirds of the population are not covered by MULs that take effect by September 1, 1989, the manufacturers will be required to install automatic protection systems in all automobiles manufactured after September 1, 1989. As discussed in an earlier section, use of the three-point seatbelt (which our analysis indicates is exceeded in its effectiveness range only by an airbag with a three-point belt) is the quickest, least expensive way by far to significantly reduce fatalities and injuries. "We start with the

accepted ground that if used, seatbelts unquestionably would save many thousands of lives and would prevent tens of thousands of crippling injuries." 103 S.Ct. at 2871. As set out in detail earlier in the preamble, coverage of a large percentage of the American people by seatbelt laws that are enforced would largely negate the incremental increase in safety to be expected from an automatic protection requirement.

The rule also contains minimum criteria for each state's MUL to be included in the determination by the Secretary that imposition of an automatic protection standard is no longer required. Those minimum criteria are as follows:

(1) A requirement that each outboard front seat occupant of a passenger car, which was required by Federal regulation, when manufactured, to be equipped with front seat occupant restraints, have those devices properly fastened about their bodies at all times while the vehicle is in forward motion;

(2) A prohibition of waivers from the mandatory use of seatbelts, except for medical reasons;

(3) An enforcement program that complies with the following minimum requirements:

(a) *Penalties.* A penalty of \$25 (which may include court costs) or more for each violation of the MUL, with a separate penalty being imposed for each person violating the law.

(b) *Civil litigation penalties.* The violation of the MUL by any person when involved in an accident may be used in mitigating any damages sought by that person in any subsequent litigation to recover damages for injuries resulting from the accident. This requirement is satisfied if there is a rule of law in the State permitting such mitigation.

(c) *The establishment of prevention and education programs to encourage compliance with the MUL.*

(d) *The establishment of an MUL evaluation program by the state.* Each state that enacts an MUL will be required to include information on its experiences with those laws in the annual evaluation report on its Highway Safety Plan (HSP) that it submits to NHTSA and FHWA under 23 U.S.C. 402.

(4) An effective date of not later than September 1, 1989.

The data in Table 5 indicate the important safety benefits that can be derived from an effective MUL. The relative benefits of an MUL compared to an automatic occupant restraint rule are dependent on two unknowns; the percentage of cars equipped with each restraint and the usage or readiness rates for them. For example, if most cars were equipped with automatic belts and seatbelt usage increased 15 to 20 percent, some people would consider the automatic occupant restraint rule quite successful. An MUL would more than match the safety benefits of this rule, however, even if it was only half as successful as the data indicate foreign MULs have been. Unlike an automatic occupant restraint, MULs achieve these safety benefits without adding any cost to the car.

Moreover, an MUL can save more lives immediately. It covers all cars as soon as it is passed and put into effect. An automatic occupant restraint rule requires lead time before the manufacturers can begin installing the devices, and then it would take ten years before most of the American fleet was replaced with cars with the automatic restraints.

At the same time, the Department recognizes that MULs must be enacted before they can have any effect. Although a number of states are considering MULs, only one state legislature has passed one that is applicable to the general population. Many commenters have argued that the possibility that MULs may be passed is an insufficient basis for the Department of Transportation to decide not to issue an automatic

occupant restraint rule; such inaction would violate the Department's obligations under the National Traffic and Motor Vehicle Safety Act.

This rule allows the Department to meet the concerns over the obstacles to enactment of MULs and still be able to take advantage of their benefits if they are enacted. To the extent that automatic protection systems encounter substantial consumer resistance, it encourages State legislatures to seriously consider what some may view as a more attractive alternative. Regardless of the ultimate course the country takes, the end result will be a significant improvement in automobile safety, which is the Department's goal. This approach avoids many of the problems associated with the other MUL proposal set forth in the SNPRM. That alternative would have resulted in waivers being granted on an individual, state by state basis, for these states that passed MULs. The chosen approach eliminates the need to "regulate" the sale of manual belt automobiles to prevent them from being purchased by people in states without MULs. In addition, under the rule, consumers should not have to delay purchasers of cars if they want to avoid automatic protection systems. Before September 1, 1989, they will have a choice, since not all cars will be manufactured with automatic protection systems. After that, either MULs will be in effect or automatic protection will be required in all cars. Under the other SNPRM MUL alternative, some consumers might have delayed the decision to buy a car while waiting for their state to pass an MUL.

Under this aspect of the regulation, the Department will review each state MUL as it is passed to determine whether it meets the minimum criteria established by the regulation. If, at any time before April 1, 1989, the Secretary determines that the total population covered by MULs that meet the minimum criteria of the regulation reaches or exceeds two-thirds of the population of the United States, the Secretary will declare the

rule rescinded. If on April 1, 1989, the Department's information indicates that two-thirds of the population are not covered by MULs, the Department will publish a notice asking for public comment on these data. If no new data are presented to the Department establishing that, prior to April 1, 1989, two-thirds of the population were covered by MULs, the automatic occupant protection requirement will remain in effect.

Some have argued that as soon as the rule is rescinded, one or more states may rescind their MULs. The Department must presume the good faith of state legislators. It also believes that the advantages of MULs will be so clear that it would be extremely difficult and unlikely that any state would rescind its statute. The Department's position on this matter is fortified by the success of MULs in foreign jurisdictions and the fact that only one of those jurisdictions ever withdrawn on MUL and that nation subsequently reinstated the law. Furthermore, it would be completely impractical to tie reinstatement/rescission in short cycles to the action of one or two state legislatures. The Department will, of course, continue to monitor the general issue of the protection of automobile occupants and in accordance with its statutory responsibilities, take whatever action is deemed necessary in the future to ensure that the objectives of the National Traffic and Motor Vehicle Safety Act are met.

If the automatic occupant protection requirements are rescinded because of the passage of MULs, up to one-third of the population may have no automatic occupant protection systems in their automobiles and their states may not pass MULs. However, as discussed at length above, there are disadvantages to each of the automatic restraint systems. No approach will completely eliminate deaths and injuries. The National Traffic and Motor Vehicle Safety Act's very purpose is "reduc[ing] traffic accidents and deaths and injuries to persons resulting from traffic accidents." 15 U.S.C. 1381. Coverage of two-thirds or more of the American people by MULs

will be a major achievement and is clearly consistent with the Act, and it will result in a more substantial reduction in deaths and injuries more quickly and at a lower cost than any other practical alternative. In the interim, this rule will have required the automobile manufacturers to make automatic protection systems available on an unprecedented scale.

A number of points must be kept in mind while considering the relative merits of an automatic restraint as compared to MULs:

- (1) MULs immediately cover the entire fleet of automobiles within the state. We do not have to wait ten or more years for a system to become installed in the entire fleet.

- (2) The Department expects that, under a simple automatic occupant restraint requirement, the primary method of compliance would have been through the use of automatic belts. Although automatic seatbelts would likely result in some increased usage, MULs, based on foreign experience, should result in higher usage rates.

- (3) Although automatic belts are relatively inexpensive in terms of the significant safety benefits they achieve, MULs have no cost increment over the existing system.

- (4) If only two-thirds of the population are covered by MULs and the MULs result in what the Department estimates to be the lowest possible use on rate based on our analysis of foreign experience—40 percent of the occupants—they will still result in a reduction in fatalities of from 1,900 to 2,400 and a reduction in moderate to critical injuries of 32,000 to 40,000 on an annual basis. This compares to automatic restraints, which, if installed in all automobiles, would result in a reduction in fatalities of between 520 and 980 and a reduction in moderate to critical injuries of between 8,740 and 15,650 at 20 percent usage, after they are installed in all automobiles. Moreover, during the first ten years, MULs would save a total of from 19,000 to 24,000 lives and prevent from 320,000 to 400,000 moderate to

critical injuries. During those same ten years, while they were being installed in the American fleet, automatic belts at 20 percent usage, for example, would save a total of between 2,900 and 5,400 lives and prevent between 48,000 and 86,000 moderate to critical injuries. Thus, the overall safety benefits of the rule should exceed the benefits of a simple automatic protection requirement, *even if one-third of the population are not covered.*

(5) We also expect that residents of MUL states will develop the habit of wearing seatbelts and will wear them even in non-MUL states. Residents of non-MUL states will be required to wear them while traveling in MUL states. This should increase the protection level somewhat.

In addition to the tremendous safety benefits of MULs, we also have the advantage of providing some local option in the decision-making. If enough states prefer MULs to automatic occupant protection, they can pass such laws and the requirement will be rescinded. We believe that offering this "option" should lessen any public resistance to an automatic occupant protection requirement. Having some ability to choose one alternative over the other should make both alternatives more acceptable. As noted earlier, public acceptance is an appropriate and important concern of the Department in its rulemaking under the National Traffic and Motor Vehicle Safety Act. Some commenters argued that automatic restraints should be used in conjunction with and not as an alternative to MULs. This argument ignores both (1) the public acceptability concerns set forth above and (2) the incentive for passage of such laws—to the extent there is significant consumer resistance to automatic protection devices—created by the Department's approach.

A number of commenters disagreed with the SNPRM proposal to establish criteria for the MULs. They argued that the criteria should be left to state governments and that establishment of criteria by the Department of Transportation might

discourage a number of States from enacting MULs. Although the Department understands this concern, it believes that, under the National Traffic and Motor Vehicle Safety Act, in order for it to accept MULs as an alternative to requiring automatic crash protection, MULs must provide a level of safety equivalent to that which would be expected to be provided under existing technology by the automatic systems. The Department, therefore, believes it is imperative that it establish minimum criteria that will ensure that the MULs will achieve a usage level high enough to provide at least an equivalent level of safety. Otherwise, for example, a State could pass an MUL that permitted so many waivers or exceptions as to be meaningless.

The Department would like to note that, rather than requiring a state to amend an existing MUL, the Department will consider granting a waiver from the minimum requirements for an MUL for any state that, before August 1, 1984, has passed an MUL that substantially complies with these requirements.

In the SNPRM, the Department asked whether a rule such as the one the Department has adopted should be based on the number of states passing MULs or the population that is covered by the MULs.

The Department has decided to base the final rule on the percentage of the population rather than the number of states for the following reasons. If three-quarters of the states passed MULs, it might result in as little as 41-42 percent of the population being covered. The Department believes that the percentage of the people who are covered is the important aspect of any MUL alternative. As the Department has already clearly explained, the valuable safety benefits of MULs warrant encouraging their enactment.

It is the position of the Department that it has both the legal authority and the justification to require automatic occupant

protection in all passenger automobiles. It is also the Department's position that it has the legal authority and the justification for rescinding the automatic occupant restraint requirement if two-thirds of the population are covered by MULs before September 1, 1989. It believes that either alternative would provide tremendous safety benefits; both meet all the standards of the Act and both carry out the objective and purpose of the statute.

The Phase-In

The rule requires the manufacturers to follow a phase-in schedule for compliance with the automatic occupant protection requirements. A minimum of 10 percent of all cars manufactured after September 1, 1986, must have automatic occupant crash protection. After September 1, 1987, the percentage is raised to 25 percent; after September 1, 1988, it is raised to 40 percent; and after September 1, 1989, all new cars must have automatic occupant crash protection.

To enable the manufacturers to determine at the beginning of the model year how many automobiles must be manufactured with automatic crash protection, the percentage of automobiles to be covered will be based upon each manufacturer's average number of automobiles produced in the United States during the prior three model years. If, for example, the manufacturer sold 3 million cars in model year 1984, 3.2 million in model year 1985, and 3.7 million in model year 1986, its three-year average would be 3.3 million automobiles; for model year 1987 (beginning September 1, 1986) it would have to equip 10 percent of 3.3 million—330,000 automobiles—with automatic occupant crash protection systems.

The Department decided to phase in the requirement for automatic occupant crash protection for a number of reasons.

First, by phasing-in, some automatic protection systems will be available earlier than if implementation were delayed until the systems could be installed in all automobiles. The earliest the Department could have required automatic protection in

100 percent of the fleet would have been September 1, 1987. Manufacturers' comments to the docket on lead-time for automatic belts ranged from immediately, for some cars such as the VW Rabbit, on which automatic belts are now offered as an option, to 3-4 years for all cars. Estimates for airbags ranged from 2 years for driver side airbags on some models on which these devices were already planned to be offered as options (some Mercedes, BMW, and Volvo car lines) to 5 years for airbags for some companies (e.g., Chrysler and Saab). Differences in lead times among manufacturers are due to such factors as the number of model lines a company has, previous research and development efforts and supplier considerations. The 36 months leadtime needed for automatic belts, *inter alia*, is required to develop spool-out features and other components on some nondetachable belts in order to maximize consumer acceptability in terms of entry/egress. Detachable belts could require vehicle modifications to strengthen belt attachment points on the door or integrate door and roof strength to accommodate the belt anchorage. While some driver airbags could be introduced with 24 months lead-time, available evidence suggests that many vehicle models will require major modifications to the steering wheel and column and extensive instrument panel modifications or redesign, including glove box relocation, for passenger airbags. Testing of occupant kinematics on the passenger side is also required. Because of the number of models involved, differing car sizes and available industry resources, it is the Department's judgment that at least a 48-month leadtime would have been required for full front airbags.

If the Department had required full compliance by September 1, 1987, it is very likely all of the manufacturers would have had to comply through the use of automatic belts. Thus, by phasing-in the requirement, the Department makes it easier for manufacturers to use other, perhaps better, systems such as airbags and passive interiors.

Phasing-in also permits consumers and the Department to develop more information about the benefits of these systems, thus enhancing the opportunity to overcome any public resistance to automatic protection. Over the first three years, consumers will have a choice as to whether they purchase an automobile with an automatic protection. Since they will not be forced to accept them, the Department expects that they will be more likely to be open-minded about their benefits.

Another advantage of phasing-in the requirement for automatic protection is that it is possible that by the time two-thirds of the population are covered by MULs, the manufacturers will have made progress in designing and producing these systems at a lower cost and a significant number of consumers will continue to demand them from the manufacturers as either standard or optional equipment.

The specific percentages used for the phase-in were chosen because they balance technological feasibility with the need to encourage technological innovation. These percentages should also provide the gradual phase-in that the Department believes will help build up public acceptance.

To ensure compliance with the phase-in requirement, it will be necessary for each manufacturer to submit a report to the Department of Transportation within 60 days of the end of each model year certifying that it has met the applicable percentage requirement. The report would have to separately identify, by Vehicle Identification Number (VIN) number, those cars that the manufacturer has equipped with automatic seatbelts and those cars that it has equipped with automatic airbags or some form of occupant protection technology. The Department will issue an NPRM on this matter in the very near future. In the event that a manufacturer fails to comply with the percentage requirement under the phase-in schedule, the Department has appropriate enforcement authority, i.e., civil penalties.

Thus, the use of a phase-in appropriately takes into account the abilities of the different manufacturers to comply with the requirement, encourages the use of different, and perhaps better, means of compliance and provides the public with an opportunity to better understand the value of automatic protection. The phase-in will permit the manufacturers to ensure that whatever system they use is effective, trouble-free, and reliable. By starting off with a relatively small percentage and building up to full compliance, the phase-in will provide the manufacturers with a better opportunity to manage unforeseen development and production problems and, as a result, also make it less likely that consumers will develop adverse impressions based upon earlier experience.

Some commentators suggested that the manufacturers would use the cheapest system to comply with an automatic restraint requirement under our SNPRM MUL alternatives. They said the short time allowed for passage of MULs would force the manufacturers to choose the least expensive alternative so that they would lose little in investments if sufficient numbers of MULs passed. The Department does not agree with this contention. It believes that competition, potential liability for any deficient systems and pride in one's product would prevent this. The phase-in schedule should provide adequate time to design and produce high quality systems.

The Credit for Nonbelt Restraints

The rule also permits manufacturers to receive extra credit during the phase-in period if they use something other than an automatic belt to provide the automatic protection to the driver. For each car in which they do so, they will receive credit for an extra one-half automobile toward their percentage requirement. It will be the manufacturer's option whether to use the same nonbelt technology to provide the automatic protection to the passenger; however, such protection must be automatic—the manufacturer may not use a manual belt for the right front seat. As a result of this option,

manufacturers will be able to get extra credit for the use of airbags, passive interiors, or other systems that meet the test requirements of the rule.

There are a number of reasons for the Department's decision to permit this option. First, it believes that the primary system that would be used under this "extra credit" alternative would be the airbag. As the data in Table 5 clearly illustrate, airbags should provide very significant safety benefits. Even though fewer cars would be equipped with automatic protection if extra credit is given for airbag automobiles, airbags—when used with belts—are very effective. In addition, the Department believes that there is a definite advantage in the initial stages of compliance with this rule to encourage the use of various automatic protection technologies. This should promote the development of what may be better alternatives to automatic belts than would otherwise be developed. If enough alternative devices are installed in automobiles during the phase-in period, it will also enable the Department to develop a sufficient data base to compare the various alternatives to determine whether any future modifications to the rule to make it more effective are necessary or appropriate.

Both the Act and the Supreme Court's decision last year provide the Department with the necessary flexibility to establish safety standards that are tailored to engineering realities. Recognizing some of the technological problems, for example, that have been discussed earlier with respect to airbags and small cars and coupling this with a desire to comply with the statutory safety objectives with the best possible systems, the Department believes it appropriate to establish a regulatory scheme that provides enough flexibility for the best possible systems to be developed.

Rationale for Not Adopting Other Alternatives

Retain

We have determined, for reasons more fully explained in the prior section—"Rationale for Adoption of the Rule," not to simply retain the existing requirements for automatic occupant crash protection. Simply retaining the existing rule would result in the use of detachable automatic seatbelts in nearly all (i.e., ninety-eight or ninety-nine percent) cars. The amended rule the Department has adopted will encourage more effective solutions to the nation's safety problems, and it should result in the prevention of even more deaths and injuries.

Amend

Airbags only. Despite the potentially large safety benefits that would result from the use of airbags, there are a number of reasons why the Department has determined that airbags should not be required in all cars.

Costs. As we have discussed in more detail elsewhere in this preamble, the Department has estimated that airbags will cost \$320 more per car than manual belts. They will also increase fuel costs by \$39 over the life of the car. In addition, the replacement cost for a deployed airbag is estimated to be \$800. Because of the high cost of airbags, physical damage and comprehensive insurance premiums will also increase, adding over \$18 to the lifetime cost of the vehicle. On the other hand, automatic belts would only add \$40 for the equipment, \$11 in increased fuel costs, and would not adversely affect physical damage and comprehensive insurance premiums. Thus, although airbags may provide greater safety benefits, when used with belts, and potentially larger injury premium reductions than automatic belts, they are unlikely to be as cost effective.

Moreover, there is still a great discrepancy between the Department's airbag cost estimates and those of industry,

while the Department's estimates for the cost of automatic belts are much closer to those of industry. If, despite the Department's ability to fully justify our cost estimates, airbags are priced much higher than it has estimated, it will further compound this problem.

Finally, the high cost of replacing an airbag may lead to its not being replaced after deployment. The result would be no protection for the front seat occupants of such an automobile.

Technical Problems: Several technical problems concerning airbags have been mentioned by manufacturers, consumers, and the vehicle scrapping industry. One technical concern involves the alleged dangers of sodium azide. Some commenters claim that sodium azide, the solid propellant which is ignited and converts to nitrogen gas to inflate the air cushion, is hazardous. It is claimed that it is an explosive, is mutagenic, toxic, and an environmental hazard. As explained in the FRIA sodium azide is not an explosive. Rather it ignites, under controlled conditions, to form harmless nitrogen gas. Furthermore, studies have continually shown that it is not mutagenic or carcinogenic in mammals, due to its inactivation by the liver. Sodium azide can be toxic, but its transport in hermetically sealed containers does not pose a hazard to manufacturers, dealers, repairmen, or consumers. The scrapping of vehicles with undeployed airbag canisters does have to be done under controlled conditions so as to avoid adverse environmental effects and, although the risk is small, the Department will continue to work with manufacturers and the vehicle scrapping industry in this area.

Another concern involves the technical problem of out-of-position occupants in small cars. Manufacturers claim that little development work has been done with airbags for small (e.g., subcompact or smaller) cars and that a particular problem in these vehicles is how to protect small children, who are not properly restrained, from the more rapidly deploying air cushion in such vehicles. The Department believes that

this problem can be mitigated and that technical solutions are available, as described in the FRIA. However, the lack of experience in this area, as well as the lack of experience for some companies in any form of airbag development, make the Department reluctant to mandate across-the-board airbags.

Some people have argued that the failure to issue a rule that will require at least some airbags might mean the end of the development of airbag technology, in this regard, it must be remembered that some improvements—such as those made by Breed Corporation—have come about without regulation. Moreover, three manufacturers—Mercedes, Volvo, and BMW—are currently planning to offer driver only airbags in their automobiles even though not required, and Ford will produce driver airbags for 5,000 U.S. General Services Administration cars next year. It is, therefore, possible and likely that others may follow suit to meet the competition. Furthermore, the extra credit provided during the phase-in should encourage manufacturers to equip at least some of their cars with airbags.

Public Acceptability: Airbags engendered the largest quantity of, and most vociferously worded, comments to the docket. Some people have serious fears or concerns about airbags. If airbags were required in all cars, those fears, albeit unfounded, could lead to a backlash affecting the acceptability of airbags. This could lead to their being disarmed, or, perhaps, to a repeat of the interlock reaction. Some people are, for example, fearful of the dangers of the sodium azide used to deploy the airbag. People are also concerned that the airbag will inadvertently deploy and cause an accident or that it will not work at the time of an accident. Some people are also concerned because they feel less secure in an automobile unless they have a 3-point belt wrapped around them (and if the Department requires a 3-point belt with an airbag, the costs will be even higher) and are thus unsure that they will be protected at the time of an accident.

Although the Department believes that these concerns can be adequately addressed, these consumer perceptions must be recognized as real concerns. It may be easier to overcome these concerns if airbags are not the only way of complying with an automatic occupant protection requirement. Under the rule being issued, if people have concerns about airbags, they can purchase automobiles that use automatic belts. The real world experience that will come with the production of airbag equipped cars during the phase-in period should help to mitigate these fears.

Effectiveness: Airbags are not designed to provide protection at barrier equivalent impact speeds less than approximately 12 mph. In addition, in order to provide protection comparable to that of a 3-point belt, they must be used in conjunction with at least a lap belt. Despite this, the overall benefits provided by an airbag, because of its extremely high "usage" rate, may be much better than those provided by automatic belts. Widespread use of both systems is the only way to develop definitive data.

Performance Standards: Several commenters questioned the Department's authority to issue an airbag only standard, claiming it would be a "design" standard. Even if the Department could legally issue a performance standard that could only be met by an airbag under present technology, it believes that by taking away the manufacturers' discretion to comply with an automatic occupant restraint requirement through the use of a variety of technologies, it creates a number of problems. First, by restricting the manufacturers, the Department runs the risk of killing or seriously retarding development of more effective, efficient occupant protection systems. With real world experience, the Department may find, for example, that automatic belts would be used by much higher percentages of occupants than currently anticipated. The manufacturers also would not be able to develop better automatic belt systems that may be more acceptable and, therefore, used by larger numbers of people. This may result in

automatic belts that save as many lives but at a much lower cost than airbags. Similarly, the development of passive interiors, being pursued by GM, would be stymied under such an option. The Department believes an airbag only decision would unnecessarily stifle innovation in occupant protection systems.

In addition, if airbags were not mandated in every car, people may be more willing to give them a chance to prove themselves than they would be if they were forced to buy them. If consumers are concerned about automatic belts, it may cause manufacturers to make greater efforts to lower the costs of airbags to make them more acceptable as an alternative.

Airbags and/or Nondetachable Seatbelts. The rationals provided in the preceding sections for adopting the new rule and for not retaining the old rule or amending it to require airbags in all cars essentially provides the basis for the Department's decision not to amend the old rule to require either airbags or nondetachable belts or just nondetachable belts; (i.e., would not permit the use of detachable belts to comply with the automatic protection requirements). It is also concerned that nondetachable belts may be too inconvenient and restrictive, resulting in serious adverse public reaction if required in all cars. (See the discussion on nondetachable belts in the first part of the "Analysis of the Alternatives.")

Limited Seating Positions. Several of the alternatives would have required all or some particular type of automatic protection for specified seating positions. For example, airbags would have been required for only the driver position under one alternative. As explained under the section on "Rational for Adoption of the Rule," the Department has determined that the data on center seats warrants exempting that position from automatic protection requirements. It also has decided that during the phase-in period, it is appropriate to give "extra credit" for providing automatic protection to

the driver through non-belt technology, such as airbags and passive interiors, to provide an incentive for developing and producing these other, possibly better, systems. The Department has determined that existing data, discussed earlier in the preamble and in the FRIA, does not warrant exempting the front right seat or providing any other special protection to the driver.

Small Cars. The SNPRM raised for comments the alternative of providing airbag protection for the drivers of small cars and questioned the safety justification for this. We have not received data that indicate that small cars are always less safe than large cars. For that reason, we have no justification for requiring any special protection for small cars.

Rescind

After a full review of the rulemaking docket and performing the Analysis contained in our FRIA, we have concluded that the Supreme Court decision in the *State Farm* case precludes us from rescinding the automatic occupant protection requirements at this time based on the present record in this rulemaking.

The Supreme Court noted that "an agency changing its course by rescinding a rule is obligated to supply a reasoned analysis for the change *beyond that which may be required when an agency does not act in the first instance.*" 103 S.Ct. at 2866 (emphasis supplied).

To avoid having its actions labeled "arbitrary and capricious," the Supreme Court said that "the agency must examine the relevant data and articulate a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made.'" 103 S. Ct. at 2866-67.

The Supreme Court also held that, if automatic belts are not justifiable, the agency should have considered requiring airbags in all automobiles. The Court found that:

Given the effectiveness ascribed to airbag technology by the agency, the mandate of the Safety Act to achieve traffic safety would suggest that the logical response to the faults of detachable seatbelts would be to require the installation of airbags. 103 S.Ct. at 2889.

It added that—

Given the judgment made in 1977 that airbags are an effective and cost-beneficial life-saving technology, the mandatory passive restraint rule may not be abandoned without any consideration whatsoever of an airbags-only requirement. 103 S.Ct. 2871.

The primary issue concerning automatic belts is the anticipated usage of the detachable belts. Although the Department cannot establish with certainty the level of usage it can expect with automatic belts, the information gathered during the comment periods on the current rulemaking NPRM and SNPRM does assist DOT in answering the Supreme Court's finding that:

[T]here is no direct evidence in support of the agency's finding that detachable automatic belts cannot be predicted to yield a substantial increase in usage. The empirical evidence on the record, consisting of surveys of drivers of automobiles equipped with passive belts, reveals more than a doubling of the usage rate experienced with manual belts. 103 S.Ct. at 2872.

Although some would argue that the belts will merely be detached after most drivers or passengers first enter the car and never used more than current manual belts are used, no evidence has been found to support this. In responding to NHTSA's 1981 rescission argument that "it cannot reliably

predict even a percentage point increase as the minimum level of increased usage,” the Supreme Court said:

But this and other statements that passive belts will not yield substantial increases in seatbelt usage apparently take no account of the critical difference between detachable automatic belts and current manual belts. A detached passive belt does require an affirmative act to reconnect it, but—unlike a manual seatbelt—the passive belt, once attached, will continue to function automatically unless again disconnected. Thus, inertia—a factor which the agency’s own studies have found significant in explaining the current low usage rates for seatbelts—works in favor of, not against, use of the protective device. Since 20 to 50% of motorists currently wear seatbelts on some occasions, there would seem to be grounds to believe that seatbelts used by occasional users will be substantially increased by detachable passive belts. Whether this is in fact the case is a matter for the agency to decide, but it must bring its expertise to bear on the question. 103 S.Ct. at 2872.

Although the Department believes that the existing automatic belt usage data is not generally applicable to the entire vehicle population, there is an *absence of data* that indicate that there will be no increase in usage associated with detachable automatic belts. The record of this rulemaking only has assertions that this will be so, but it lacks support for those assertions.

The Supreme Court has made it clear that it believes the better arguments support increased usage. Not only does the Department have no new evidence to counter this, but, for the first time, the manufacturers have acknowledged that, at least initially, automatic detachable belts will result in an increase in usage. The Department also now believes that some level of increase will occur based on the reasons people give for not using manual belts (e.g., “forget” or are “lazy”). Thus, it has

no evidence that the belts will not be used, but merely questions about how large an increase will occur. The Supreme Court said:

(An Agency may not) merely recite the terms "substantial uncertainty" as justification for its actions. The agency must explain the evidence which is available, and must offer a "rational connection between the facts found and the choice made." * * * Generally, one aspect of that explanation would be a justification for rescinding the regulation before engaging in a search for further evidence. 103 S.Ct. 2871.

It could also be argued that the public will not accept automatic belts because of such problems as their obtrusiveness and inconvenience. Although an argument about public acceptability can be made, strong data on which to base it do not exist. As is discussed in more detail elsewhere in this preamble, the public opinion surveys that have been taken are flawed to the extent that they will not withstand close scrutiny and support a rescission decision that has already been struck down once by the Supreme Court.

The Supreme Court also found that, if detachable belts were unacceptable to the agency, then it "failed to articulate the basis for not requiring nondetachable belts under Standard 208." 103 S.Ct. at 2873. The Court added that, "while the agency is entitled to change its view on the acceptability of continuous passive belts, it is obligated to explain its reasons for doing so." 103 S.Ct. at 2873. Finally, the Court said that

The agency also failed to offer any explanation why a continuous passive belt would engender the same adverse public reaction as the ignition interlock, and, as the Court of Appeals concluded "every indication on the record points the other way." * * * We see no basis for equating the two devices: the continuous belt, unlike the ignition interlock, does not interfere with the operation of the vehicle. 103 S.Ct. at 2873-74.

Again, "substantial uncertainty," 103 S.Ct. at 2871, will not suffice and there is no substantive evidence in the rulemaking record to refute the point made by the Court.

The Department has no new evidence that nondetachable belts are not an acceptable means for reducing deaths and injuries. Although there are some comments in the current docket that some people will dislike them and may even cut them or otherwise destroy them, it is primarily speculation: there is no clear data. Moreover, even if 20 or 30, or even 40 or 50 percent of the people find some method for defeating the belt, the evidence in the record indicates that it will still result in a significant reduction in deaths and injuries for the remainder who do not.

Some people expressed concern about emergency egress from nondetachable belts. The Supreme Court had the following to say on this:

* * * NHTSA did not suggest that the emergency release mechanisms used in nondetachable belts are any less effective for emergency egress than the buckle release system used in detachable belts, in 1976, when General Motors obtained the agency's approval to install a continuous passive belt; it assured the agency these nondetachable belts with spool releases were as safe as detachable belts with buckle release. 103 S. Ct. at 2873.

Manufacturers commented that it would likely be more difficult to extricate oneself from a nondetachable as compared to a detachable automatic belt. However, they did not claim that it represented an "unsafe" condition, and again, there is no new evidence to buttress their concerns.

Finally, there are a number of attractive arguments that are based in part on the following theme: The presence of the government in the middle of the debate over passive restraints has distorted the activities of both automobile manufacturers and insurance companies; if the marketplace has been allowed to work, insurance incentives would have led to the voluntary

adoption of one or more systems by the manufacturers. Whether these arguments are correct or not, they cannot be considered in a vacuum. In fact, the context provided by the Supreme Court is quite harsh:

For nearly a decade, the automobile industry waged the regulatory equivalent of war against the airbag and lost—the inflatable restraint was proven sufficiently effective. Now the automobile industry has decided to employ a seatbelt system which will not meet the safety objectives of Standard 208. This hardly constitutes cause to revoke the standard itself. Indeed the Motor Vehicle Safety Act was necessary because the industry was not sufficiently responsive to safety concerns. The Act intended that safety standards not depend on current technology and could be “technology-forcing” in the sense of inducing the development of superior safety design. 103 S.Ct. at 2870. (Footnotes omitted).

The history of this rulemaking, the *State Farm* decision, and the rulemaking record have put us in a position where rescission of the automatic occupant restraint requirements—unless there is a very substantial increase in use of seatbelts in the future—cannot be justified. On the other hand, as discussed in detail elsewhere in the preamble, such a substantial increase as a result of the widespread enactment of MULs would provide increased safety benefits much more quickly and at a much lower cost, thus making rescission clearly justifiable. As the Supreme Court said, “We start with the accepted ground that if used, seatbelts unquestionably would save many thousands of lives and would prevent tens of thousands of crippling injuries.” 103 S. Ct. at 2871. It also noted that the Department originally began the passive restraint rulemaking exercise because “[i]t soon became apparent that the level of seatbelt usage was too low to reduce traffic injuries to an acceptable level” 103 S. Ct. at 2882. The data set out elsewhere in this preamble and in the Final Regulatory Impact Analysis demonstrate the dramatic reductions in

deaths and injuries that widespread usage of the manual belt systems would achieve. Thus, the Department has concluded that if two-thirds or more of the American people are covered by such laws, the need for an automatic occupant restraint requirement would be obviated.

Demonstration Program

Because of the length of time a demonstration program would take, the Department believes that it would be necessary to justify rescission of the old rule under this alternative. It also believes that the phase-in portion of the amended rule will achieve the public education/acceptance aspects of any demonstration program.

Other Mandatory Use Law Alternatives

The Department's rationale for not adopting the other MUL alternatives is explained more fully in the preceding sections. These other alternatives are generally deficient in one of two respects: they either make it necessary for the Department to justify rescission under current circumstances or the requirements they impose are much too burdensome.

Under the alternative raised in the NPRM, the Department would have sought the enactment of MULs. The Department could not be certain that a sufficient number of MULs would pass or that, if passed, they would contain the necessary provisions concerning penalties, enforcement, sanctions, education and waivers. As a result, the Department could not determine whether the necessary level of benefits would be achieved.

Under the other SNPRM alternative, the Department would have waived the requirement for automatic restraints in individual states that enacted MULs. This alternative would have required the "regulation" of the sale of the manual belt cars to ensure that they were not purchased by people not covered by MULs. It also would have had adverse market impacts if consumers delayed their purchases of cars, in anticipation of

their states passing MULs, in order to avoid purchasing automatic restraints.

Legislation to Require Consumer Option

As with some of the previous alternatives, this approach would require the Department to justify rescission of the old rule. In addition, it would place a tremendous economic burden on the manufacturers to have to be able to provide a variety of systems on each model. It would, in turn, raise the cost of all automobiles for the consumer.

Airbag Retrofit Capability

This, too, would require justification for rescission. It would also result in increasing the cost of all cars even if no one ever retrofitted a car.

VI. Testing Procedures

Repeatability

The single most significant repeatability issue related to test procedures, as reflected in comments to the docket, was that of the repeatability of the barrier crash test results. Nearly all manufacturers claim that because test result differences are encountered in repeated tests of the same car, and since these differences are large, they can not be certain that *all* their vehicles will be in compliance even when their development and compliance tests show that the vehicles are. These large differences, or test variability, place a manufacturer in jeopardy, it is claimed, because NHTSA, while checking for compliance, may find a single vehicle with test results exceeding the maximum values in the standard, even though the manufacturer's results are to the contrary. Thus, they stated, they might have to recall vehicles and make vehicle modifications (which they claim they would not know how to make) even though the vehicles actually comply with the standard. The auto companies say that the test result variances are essentially

due to deficiencies in the test procedures themselves as well as the prescribed Part 572 test dummy.

Because of these alleged deficiencies, the argument goes, the standard is neither "objective" nor "practicable" as required by statute. Manufacturers cite court decisions in *Chrysler Corp. v. DOT* 472 F.2d 659 (6th Cir. 1972) and *Paccar, Inc. v. NHTSA*, 573 F.2d 632 (9th Cir. 1978), to argue their point. In *Chrysler*, the court said that for a standard to be "objective"

tests to determine compliance must be capable of producing identical results where test conditions are exactly duplicated, that they be decisively demonstrable by performing a rational test procedure, and that compliance is based upon the readings obtained from measuring instruments as opposed to the subjective opinion of human beings. 472 F.2d at 676.

Because manufacturers claim that the only way they can assure compliance is to "overdesign" their vehicles (e.g., because of alleged variances in results, to comply with a HIC requirement of 1000 manufacturers would design their vehicles to only have a HIC of 500), resulting in excessive costs without safety benefit, the *Paccar* case has relevance. In overturning a truck braking standard, the Court said that although the standard's test procedures were "objective," they were not "practicable" because variations in test surface skid numbers required manufacturers

not simply to comply with the stated standard, but to overcompensate by testing their vehicles on road surfaces substantially slicker than official regulations require. 573 F.2d at 644.

The Department continues to believe, however, that FMVSS 208 is both objective and practicable. Manufacturers have not supplied for the record data to support their claims of excessive test variability nor have they demonstrated that the bulk of any variability is due to test procedures and instruments as compared to vehicle-to-vehicle differences.

The primary, and for most manufacturers the sole, basis for claims of variability was the Repeatability Test Program conducted by NHTSA under its New Car Assessment Program. NHTSA tested 12 Chevrolet Citations in an attempt to ascertain the reliability of publishing barrier crash test results based on a single test. The results of the testing program for HIC (only HIC was mentioned by manufacturers as a variability "problem") were:

	<u>Mean</u>	<u>Standard deviation</u>	<u>Coefficient of variation (percent)</u>
Driver.....	655	137	21
Passenger	694	77	11

The manufacturers focused on the coefficient of variation (COV) of the driver HIC values—21 percent—and claimed that this is too large. They claim that with this large a COV, they would have to design their vehicles to achieve a HIC no higher than 560 to assure that 95 percent of their cars, when tested, would have HIC values below 1000.

This argument is faulty for several reasons. First, the NCAP results were based on the testing of a single car—the Citation—at a *higher* test speed (35 mph) than required in FMVSS 208 (30 mph). Passing the FMVSS 208 criteria at 35 mph requires a vehicle to absorb 36 percent more energy—since the energy dissipated in a crash is proportional to the square of the speed—than in the required 30 mph crash. The Department would expect that test result differences would be lower at 30 mph since at 35 mph the design limit of certain structural members has been exceeded. Assuming that the COV at 35 mph would be identical or lower than that at 30 mph is without foundation and is counterintuitive to sound engineering theory.

Second, the NCAP data can only be used to derive a COV, at 35 mph, for the Citation. Extending the Citation results to other vehicles is again without basis. For example, Volvo tested four MY 1983 760 GLE vehicles according to the NCAP

procedures (although an additional 3,760 GLEs were tested by a laboratory, MIRA, for Volvo, the NCAP procedures may not have been fully followed by that organization and thus can not be combined with Volvo's own data). The results of the four Volvo tests are:

	<u>Mean</u>	<u>Standard deviation</u>	<u>COV (percent)</u>
Driver	898	71	8
Passenger	731	27	4

Here, we see coefficients of variation about 60 percent lower than that shown for the Citation. Although not as many tests were run as for the Citation, the Volvo 760 GLE results cast doubt as to whether the Citation results can be applied to all vehicles. The Department also points out that even the Citation results for the *passenger*, which tended to be ignored in the docket comments (manufacturers instead tended to focus on the higher COV for the driver) exhibit half the COV cited by the auto companies.

Ford commented that the Volvo data, "though nominally somewhat lower, was not significantly different than that found in the Citation * * *" Ford, however, used all seven Volvo tests. Since these tests were not all conducted similarly, they are from two different statistical "universes" and can not be combined for statistical purposes. Nor does Ford disagree that the Volvo results are lower than for the Citation. And, Ford only compared the standard deviation of the Citation and 760 GLE results. Since the *mean* was higher for the 760 GLE than the Citation, and since the COV is equal to the standard deviation divided by the mean, had Ford compared COVs it might have found that these differences *were* statistically significant. Thus, Ford's use of the volvo is inaccurate in that it: (1) Combines two unlike data sets—the MIRA and Volvo 760 GLE tests; (2) fails to examine coefficients of variation, a better descriptor of variance than the standard deviation; and (3) only examines the larger differences associated with driver HIC, and ignores the lower, passenger variances.

Ford also supplied, in response to the SNPRM, data which the company claims shows that their 33 Mercury tests, with airbags, conducted in 1974 also exhibited the same variances. Ford took the results of these tests on MY 1972 Mercurys, which were conducted at 30 mph, and "scaled" them to 35 mph. They claim that after "scaling," the Mercurys exhibited the same standard deviation as the Citation.

The Department has examined the actual 30 mph test results of these Mercurys, contained in Ford's February 1976 report, "Airbag Crash Test Repeatability," ESRO Report No. S-76-3, and finds that the results are not just for frontal barrier tests but also 30 degree angle tests. At least nine of the 24 frontal tests were at the oblique angle. Although FMVSS 208 requires angle tests, the comparison of angle plus frontal results to only frontal results is somewhat inappropriate.

Furthermore, Ford again compares only the standard deviations of driver HICs. After "scaling," Ford shows the driver HIC standard deviation to be 137. However, the standard deviation based on Tables 4-1 of the Ford report show driver HIC standard deviations, without "scaling," in frontal crashes to be only 80, and the COV in frontal crashes, given the mean of 479, is 16.7 percent. As Ford somehow *converted* these values, or some other value representing both frontal and oblique crashes, from 30 mph to 35 mph. Ford is implicitly agreeing with NHTSA that one can not compare statistical results from crash tests conducted at different speeds.

These Departmental positions—that the Citation tests may not be applicable to all cars and that 35 mph test results may not be applicable to results at 30 mph—were raised in the SNPRM wherein the Department stated "We are also interested in comments on the relevance of the Citation variability tests (conducted at 35 mph) to the FMVSS 208 compliance tests (specified to be conducted at 30 mph) and the applicability of the new Citation results to other vehicles." Other than the above cited Ford data, responses were submitted by

only GM, which provided data based on 30 mph sled tests which showed COVs of 11 and 8 percent for the driver and passenger, respectively, and Volvo, which also provided sled test data showing a mean of 467 and a COV of 12.5 percent. Further, only Ford claimed that "comparable variability" to that resulting from the Citation tests "would be expected for other vehicle models." Other manufacturers failed to address the issue.

Based on the above, the Department concludes that the Citation test results can not, without the analysis of data for other vehicles, be applied to other car models, at lower speeds.

The second reason the Department does not accept manufacturer claims of excessive variability is also related to test speeds. Variability by itself is not a crucial factor for a manufacturer to be concerned about. Rather, it is the combination of variability *and* the mean (or average) value which can be cause for concern. For example, assume that a manufacturer is 95 percent confident that all its HIC test results will be within ± 150 points of the mean. If the mean value is 900, the manufacturer may not be certain that all its vehicles will comply with a criterion whose maximum value is 1000. However, if the mean is 500, then the ± 150 variation is of little consequence in ascertaining assurance of compliance.

It is clearly intuitive, due to the 36 percent less energy involved in a 30 mph crash compared to a 35 mph crash, that average test results will be lower at the 30 mph barrier crash speed than at the 35 mph speed used in the NCAP program. No commenter to the docket argued to the contrary. Therefore, the issue of variability can not be examined in isolation but *must* be analyzed in the context of the mean value.

Reexamining the Ford Mercury data, conducted with airbags at 30 mph, the mean HIC value, taken from page 4-20 of the Ford report, is 319.9. With such a low mean, the derived variance is irrelevant for compliance purposes. The Department wishes to point out that: (1) Based on its NCAP

testing, even with manual belt systems and when tested at 35 mph, 80 percent of the dummy drivers and about 60 percent of the passenger dummies met the FMVSS 208 injury prevention criteria with mean HICs of 899 and 845, respectively. These percentages would of course increase and the means decrease at 30 mph. And (2) all *airbag* tests shown mean HICs in the 400-500 range, a range wherein variability again becomes meaningless for assuring compliance. For instance, tests with airbags for MY 1972 Pintos showed maximum HICs in the 500-600 range with the median value less than 400; the maximum and mean for MY 1972 Mercurys were less than 700 and less than 400, respectively; and for MY 1974-76 GM airbag cars the value were under 600 and about 450, respectively.

Thus, mean HICs for automatic belts systems in 30 mph barrier crashes would be lower than the 899 and 845 values observed from the 35 mph NCAP program and for airbag equipped cars would likely be in the 400-500 range, making variability a moot issue.

A third reason that the Department believes that variability is not so significant an issue as to preclude the standard's reinstatement is that manufacturers have not demonstrated that the test procedures and test dummy are the major causes of variability. GM and Volvo provided sled test data which showed COVs of about 10 percent. Since a sled test provides a steady crash pulse, it was argued that most of, if not all, the variability seen was due to dummy and test procedure variances. Without arguing the point, the Department notes that these manufacturers failed to address the question of whether this 10 percent level of variability, when combined with an expected mean, is unacceptable. For instance, if it is assumed that the mean 30 mph passive belt HIC is 800—which is not unreasonable given current means of between 845 and 899 at 35 mph—a COV of 10 percent translates into a standard deviation of 80. Since 95.45 percent of all test results fall within the mean ± 2 standard deviations, a manufacturer

can be sure that more than 95 percent of its cars will have HICs below 960 ($800+2[80]$) and the manufacturer could be about 98 percent certain that all tested cars will have values below 1000. A lower mean would increase the above-mentioned percentages.

In the SNPRM, the Department requested comments on what level of variability was deemed "reasonable," given that some variability will always exist. Only Renault provided a quantitative answer, saying that "the variation coefficient must not exceed a maximum of 10 percent." Although Renault provided no further justification for its recommendation, the Department notes it is nearly identical to the variation contributed by the test procedures and dummy, according to Volvo and GM.

Manufacturers generally asserted that the observed variability was not caused by vehicle-to-vehicle differences but by the test procedures and use of Part 572 dummy. In the SNPRM, the Department said that it did not believe that the dummy contributed significantly to test variability. The Department, after reviewing the docket, still retains this conclusion. The 1976 Ford repeatability test report concluded that "that portion of the variability in the test results which can be attributed to differences between the nine part 572 dummies * * * is small for the HIC measurements and virtually nil for the chest g and femur load measurements." Ford engineers also said in a SAE paper (SAE paper 750935) that "differences in test readings from one test dummy to another were rather small, especially when compared to other factors * * * . In fact, the variance in test readings associated with differences among dummies was essentially zero for chest g and for femur loads." Renault in response to the SNPRM, said that "the present Part 572 dummy is not the major cause of the dispersion of results."

In its NCAP repeatability program, NHTSA found that differences in dummy calibration results have "no correlation * * * to dummy response results in the vehicle crash event." (SAE paper 840201, February 1984). NHTSA further noted that the Citation's "structural response * * * displayed significant variability" from vehicle-to-vehicle. These differences included variations in engine cradle buckling, floor pan and toe board buckling, and irregular motion of the steering column. NHTSA concluded that "previous safety research has demonstrated that these structural behavior characteristics do have influence on dummy HIC values, possibly of major proportions." Because of the large variations among vehicles and the lack of correlation of dummy calibration to HIC results, NHTSA believes that a large part of the test variability is due to vehicle variability.

In summary, the Department finds that FMVSS 208 meets all statutory criteria for objectivity and practicability, that manufacturers have not demonstrated that there would be either excessive variability in total or due to the test procedures alone, and that compliance with FMVSS 208, particularly with airbags, does not represent an insurmountable burden to manufacturers.

Compliance Procedure

Having concluded that any test variability is not sufficient to delay the standard's reinstatement, the Department is still concerned that manufacturers believe themselves to be in unacceptable compliance jeopardy. To reduce this jeopardy, manufacturers suggested that a "design to conform" policy be adopted. They claimed this was neither inconsistent with court decisions regarding the required objectivity of standards nor would it materially affect vehicle design, since they would still have to demonstrate, through crash tests, that their design could achieve the required levels of compliance. Furthermore, it was argued by VW that NHTSA presently operates under this concept.

We agree with VW that, in the event of a nonconforming test result, NHTSA will seek to obtain manufacturer compliance, test data and/or conduct a second compliance test itself, prior to asserting that a particular model is in noncompliance. The Department is unaware of any instance in which NHTSA has sought remedy under the statute for noncompliance with a safety standard based on only a single test result. Thus, for example, if NHTSA found a car with a HIC value of 1050 and, after reviewing manufacturer test data and/or conducting another test, both of which demonstrated compliance, it would likely determine that the manufacturer had exercised "due care" and would not seek remedy under the statute.

However, the *Chrysler* Court disapproved of any agency offering to investigate whether differences in test results (between manufacturer tests and agency compliance tests) were sufficient to determine a noncompliance. The court stated that manufacturers needed objective assurances and there was no room for agency investigations. Thus, the Department recognizes that automobile companies need some guarantee that should one car out of a million, for example, be found to fail the compliance test, that all one million will not have to be recalled.

The guarantee sought by the industry, "design to conform," though, is not acceptable. As pointed out in the SNPRM, the Department believes that such an approach introduces unacceptable subjectivity into the determination of compliance with the standard, in contravention to the decisions of the courts to minimize non-objective determinations of noncompliance. Instead, since NHTSA already exercises discretion in compliance cases, we will seek, through a subsequent Notice to be issued shortly, to provide such assurances without compromising either safety or the necessary statutory objectivity. Essentially, we will propose to amend FMVSS 208 by recognizing that a vehicle shall not be deemed in noncompliance if a manufacturer has exercised "due care" in designing

and producing such vehicle. Rather than increase the subjectivity of the compliance process by introducing a "design to conform" concept, NHTSA will explicitly recognize in FMVSS 208 the statutory direction expressed in section 107(b)(2) of the National Traffic and Motor Vehicle Safety Act (15 U.S.C. 1397), that the penalties associated with producing a noncomplying vehicle "shall not apply to any person who establishes that he did not have reason to know *in the exercise of due care* that such vehicle * * * is not in conformity with applicable Federal motor vehicle safety standards * * *" (emphasis added).

Test Dummies

As stated earlier, the Department continues to believe that the Part 572 test dummy fully meets all statutory criteria and is not a major source of test result variability. Most manufacturers, however, disagreed. Volvo contended that the dummy has "serious limitations" and must be more durable, repeatable, and trouble-free. Toyota said it could not be sure of the influence of the dummy on test results. Mercedes also said that the Part 572 dummy is not sufficiently repeatable while Ford said that the dummy's calibration is repeatable but its crash test performance may not be. American Motors said that the Part 572 dummy is a state-of-the-art compromise and lacks in measurement fidelity.

While not claiming that the Part 572 dummy is not repeatable or fails to meet statutory criteria, GM urged NHTSA to approve the use of the Hybrid III dummy as an alternative test device. GM said that the Hybrid III "offers significant improvements over the part 572 dummy relative to biofidelity of frontal head, chest and knee responses, fore-aft neck bending, ankle and knee articulation and automotive seated posture." Nissan agreed that the Hybrid III is a superior dummy which demonstrates greater repeatability. Conversely, Mercedes said that the Hybrid III is not any more repeatable than the Part 572 dummy.

As part of its petition to use the Hybrid III, GM submitted a paper by Mertz ("Anthropomorphic Models," GM, USG 2284, Part III, Attachment I, Enclosure 3) which stated that the Part 572 dummy (actually, the Hybrid II dummy, also developed by GM) has "good repeatability, durability, and serviceability." "The Part 572 dummy represents the state-of-the-art of dummy technology in the early 1970's."

Based on the conclusions of the Ford Mercury testing and the agency's NCAP testing, NHTSA has concluded that the dummy does not contribute significantly to test variability. Renault agreed with this conclusion. Industry characterizations of the dummy, as shown above, vary considerably, from the Part 572 being a major cause of variability to it not being a major cause, to the Hybrid III being an improvement, to it not being an improvement. Only a few manufacturers provided data to support their contentions but these data, supplied by Ford, GM, and Volvo, based on sled tests, could neither *separate* the contribution of variability associated with the dummy alone nor demonstrate why an dummy-induced test result variances were so high as to be unacceptable. Since the Department recognized, in the SNPRM, that some variability will always be present it specifically sought comment on the levels of variance which were deemed "unacceptable." Only Renault replied to this direction question and it did not supply a rationale for its conclusion. In the absence of data to the contrary, the Department continues to believe that the current Part 572 test dummy is adequate to use as a compliance test device in standard 208.

Nevertheless, it is recognized that the Part 572 dummy is more than 10 years old and, we agree with AMC and GM in this regard, is a state-of-the-art compromise. Recognizing that dummy development, especially improved biofidelity—that is, the dummy's replication of actual human motion and potential for injury—is crucial for continued improvements in vehicle safety, NHTSA has been utilizing the Hybrid III dummy in its research and development work, as have GM and other

manufacturers. NHTSA recognizes that the Hybrid III dummy does have additional measurement capability over the Hybrid II (Part 572) and, assuming injury criteria can be agreed upon and its repeatability, durability, etc. verified, it could be viewed as an improvement over the Hybrid II. Because of these views, and the data presented in the GM petition, NHTSA will address these issues in a separate rulemaking. Because we have concluded that the current Part 572 dummy is fully adequate to use in testing to the injury criteria specified in FMVSS 208, action on the Hybrid III dummy is irrelevant for the purposes of this rulemaking. Should NHTSA decide to permit the use of the Hybrid III as an alternative test device, as GM has petitioned, it would not pose any additional burden on manufacturers since they could still use the current Part 572 dummy for compliance purposes. If NHTSA decides to substitute the Hybrid III for the Hybrid II as the compliance test device specified in Part 572, a gradual phase-in period would be provided so as not to interfere with manufacturer leadtime and the timely implementation of the automatic occupant protection provisions of FMVSS 208.

Injury Criteria

Several manufacturers recommended that the injury criteria associated with potential head injury be adjusted in two ways: (1) To eliminate the measurement of HIC in this absence of head contact, and (2) to increase the HIC in case of a head strike to 1500 from its current level of 1000.

It is recognized by NHTSA that the Head Injury Criterion (HIC) was primarily developed from tests of forehead impacts, resulting in acceleration of the brain in the anterior-posterior (i.e., forward and backward) directions. This was pointed out in the SNPRM, wherein the Department also briefly discussed accident and test data, including information from NHTSA itself, which suggested a very low probability of brain injury in the absence of head contact. However, it was

suggested that measuring HIC in non-contact situations could serve as a surrogate for potential neck or other injuries.

Volvo supplemented the above arguments by stating that the use of HIC for other than what was the basis of its development—forehead impacts in the anterior-posterior directions—results in less dummy biofidelity. Volvo suggested that this expanded use of HIC, beyond what it was intended to measure, is inappropriate. They stated that if neck injuries are of concern, then other criteria, related solely to the neck, be used. This position on neck injuries was supported by Peugeot, Renault, Ford, and GM. Mercedes and MVMA also opposed measuring HIC in non-contacts but did not mention its use as a surrogate in potentially preventing neck injuries. Allstate opposed its elimination in such crash situations, claiming it protects occupants from cervical and spinal injuries.

The primary derivation of HIC from head impact tests is not in question. HIC was developed from the Wayne State Tolerance Curve (WSTC) which was itself based on the hypothesis that the dominant head injury mechanism was linear acceleration.

The Department agrees with the commenters, based on its own review of the origins of HIC, that its predictive capability of neck injuries is weak. The Department further agrees that the prevention of neck injuries, through assuring that excessive head motion is prevented, is important for automobile safety since neck injuries account for 78.2 percent of all crash-related non-contact harm in passenger cars (see SAE Paper 820242, "A Search for Priorities in Crash Protection," Malliaris, et al., February 1982). The Department also notes that the Hybrid III dummy is capable of neck injury measurements, by monitoring the dummy's neck's axial loading, shear load, and bending movement (see GM's petition, USG 2284 Part III, Attachment I, Enclosure 2). Although the Hybrid III's neck biofidelity may be deficient in that its lateral bending response

may not be humanlike and its neck too stiff in axial compression, its measurement of fore/aft bending provides superior biofidelity to the Part 572 dummy, which is incapable of any direct injury measurements (see *ibid.* Enclosure 3).

The Department thus believes that prevention of neck injury would be better served by direct dummy measurement, measurement which can be made with the Hybrid III. This position was also expressed by the U.S. delegation to ISO/TC 22/SC 12/WG 6 which stated that "the head injury criterion should not be applied in the event of no head impact * * * other injury criteria, perhaps based on neck loads * * *" should be used instead. As part of the subsequent rulemaking mentioned previously, the adoption of neck injury criteria will be proposed. In addition, the issue of noncontact HICs will be further addressed in the context of the current Part 572 dummy. Data relating to the biofidelity of the dummy, in this regard, will be specifically sought.

This issue is not viewed as one which affects the decision regarding FMVSS 208 contained in this notice. Any action by NHTSA in this area should only result in reducing the required test burden, thus additional leadtime should not be required. Action regarding the dummy is viewed by the Department as seeking to continually improve the biofidelity of its anthropomorphic test devices, and is thus separate from, although related to, the 208 decision.

Although several manufacturers requested that the HIC criterion, even when there is a head strike, be raised to 1500, the Department will not take any action on that issue at this time. The 1500 HIC level is the subject of a petition for rulemaking by the CCMC. NHTSA will respond directly to this petition at the same time that it prepares the aforementioned rulemaking action.

Oblique Test Requirement

The SNPRM contained a proposal to eliminate the requirement to test compliance at angles up to 30° from the longitudinal direction. The basis for this proposal was data from Ford's Airbag Crash Test Repeatability report, which consistently showed lower dummy injury readings in angular crashes, especially for HIC and chest g's, and NHTSA test data which agreed with that from Ford, Chrysler, BMW, Volvo, Nissan, Mercedes, Honda and Mazda agreed with the proposal, claiming that no insight in restraint performance was provided by the test, it was not essential for verifying compliance since test results were lower than in the direct frontal tests, and thus it only contributed to leadtime and testing costs. Mazda was the only company to provide data to support its conclusion. Mazda provided the results of a single test which showed lower readings in the angular than the frontal crash.

GM and Saab opposed the deletion of the oblique test. GM, in further discussions with NHTSA, based its objection on the belief that the oblique test is more representative of real world crashes than the frontal test. GM also said that regardless of the agency's decision it would continue to conduct oblique test; thus, although it believed such tests to be more representative it has no objection to their being deleted from the standard. Saab, in subsequent discussion with NHTSA, did not elaborate on their assertion that deletion of the test would be a "cover-up" for airbag deficiencies nor did VW, when contacted by NHTSA, explain why they believed the test necessary for airbags but not automatic belts.

The Department continues to believe, as expressed in the SNPRM, that the oblique test requirement may not meet the need for motor vehicle safety and thus may unnecessarily add to compliance costs. However, prior to taking final action the Department wishes to have additional test data and/or supporting and dissenting arguments. This information will be sought as part of the notice described earlier, as will comments

from the public on the issue of international harmonization of test requirements, as sought by Peugeot and Renault.

Other Test Procedure Issues

The Department still believes that adoption of the NCAP test procedures will reduce test result variability. The added specificity of these procedures, as compared to the current FMVSS 208 compliance criteria, can have no other effect than to reduce variability compared to inconsistent dummy placement, albeit by some unknown amount.

However, we also agree with manufacturer comments concerning the inadequacy of notice as to the specific parts of the NCAP procedure to be adopted. In addition, several commenters suggested other test procedure changes to even further reduce variability. The soon to be issued NPRM will thus repropose the specific NCAP procedures to be adopted, plus propose additional changes as suggested in comments to Notice 35 of Docket 74-14.

Ford, Chrysler, and VW suggested that if automatic belts are the means of compliance, then the static test requirements of FMVSS 209 and 210, instead of the dynamic test requirements of FMVSS 208, be used to check compliance. The Department disagrees. The concept behind FMVSS 208 is that it is an overall vehicle standard, not just a restraint standard. To simply test the restraint system, statically, would not assure the occupant that injury protection, equivalent to that of other types of restraints which would continue to have to be dynamically tested, was being provided. In this regard, the Department agrees with Allstate that dynamic testing (as is also done for child restraint systems as required by FMVSS 213) is superior to static testing and the requests cited above are responded to in the negative.

The Department also rejects GM's proposal to amend FMVSS 208 by permitting compliance with manual belts if the vehicle complies with the injury criteria at 30 mph with the dummies belted and at 25 mph with the dummies

unbelted. The Department does not believe, based on data in its possession on crash tests at 25 mph with unrestrained dummies, that equivalent safety benefits are possible with this proposal. GM's estimate of benefits is not complete in that it is based on vehicles in NHTSA's NCSS file, vehicles which, on average, are of early 1970's vintage. A more complete analysis would be based on the ability of *current* production vehicles to supply such protection. Data available to NHTSA indicate that some current vehicles are capable of supplying automatic occupant protection at speeds up to 25 mph. Without data to the contrary, there is no assurance of the magnitude of safety improvement associated with the GM proposal. Since it has not been demonstrated as an equal alternative, it will not be further considered in this rulemaking, although the Department applauds GM for its work in the area of passive interiors and encourages both it and other companies to continue to provide protection for otherwise unprotected occupants. The Department also notes that nothing in FMVSS 208 precludes compliance through the use of "passive interiors" as being developed by GM. But such compliance must be demonstrated at 30 mph, not 25 mph as GM has suggested.

Finally, Ford requested that convertibles be exempted from the automatic occupant protection requirements. Ford argues that automatic belts are not feasible in convertibles and that the only means of compliance would be with airbags, thus resulting in a "design" standard for these vehicles. Since the statute requires that safety standards be "appropriate for the class of vehicles to which they apply," and since convertibles are already exempt from the requirement that all front outboard seating positions have lap and shoulder belts, Ford argues that exemption for convertibles is appropriate. Although we disagree with Ford that providing automatic belts in convertibles is not feasible, it may be not acceptable or appropriate to do so. NHTSA will seek additional guidance from the public on this issue in subsequent rulemaking.

VII. Regulatory Impacts

The Department has considered the impacts of this final rule and determined that it is a major rulemaking within the meaning of E.O. 12291 and a significant rule within the meaning of the Department of Transportation Regulatory Policies and Procedures. A Final Regulatory Impact Analysis is being placed in the public docket simultaneously with the publication of this notice. A copy of the Analysis may be obtained by writing to: National Highway Traffic Safety Administration, Docket Section, Room 5109, 400 Seventh Street, SW, Washington, D.C. 20590.

The Department's determination that the rule is major and significant is based on the substantial benefits and costs resulting from the requirement for the installation of automatic protection systems. The Department's determinations regarding these matters are discussed elsewhere in this preamble. As noted above, the number of lives saved and injuries prevented will depend on the type of automatic restraints installed in new cars and on the usage and effectiveness of those restraints. Estimates range from 520 to 9,110 lives saved, 8,740 to 155,030 moderate to critical 2-5 injuries prevented and 22,760 to 255,770 minor injuries prevented. The total incremental cost increase for a new car would be \$51 for automatic belt cars (incremental cost of \$40 and lifetime energy costs of \$11), \$232 for a high volume of cars with driver position airbags (incremental cost at \$220 and energy costs of \$12), and \$364 for a high volume of cars with airbags for all front seat occupants (incremental cost of \$320 and energy costs of \$44). Assuming 10 million cars sold annually, total economic costs, exclusive of insurance or other savings, would be between \$510 million and \$3,640 million.

The Department has also assessed the impacts of this final rule on car manufacturers, automatic restraint suppliers, new car dealers, and small organizations and governmental units. Based on that assessment, I certify that this action will not

have a significant economic effect on a substantial number of small entities. Accordingly, the Department has not prepared a final regulatory flexibility analysis. However, the impacts of the final rule on suppliers, dealers and other entities are discussed in the FRIA.

The impact on airbag manufacturers is not likely to be significant, but will be positive. The final rule does not require any car manufacturer to install airbags in any new cars. To the extent that car manufacturers respond to the incentive provided by this final rule to install airbags, airbags sales will increase. The Department is not able to assess precisely the extent to which car manufacturers will so respond.

Similarly, the suppliers of automatic belts are not likely to be significantly affected. These are generally the same firms that currently supply manual belts. Therefore, their volume of sales is not expected to increase significantly as a result of this final rule. There may be some economic benefits associated with developing and producing the more sophisticated types of automatic belts.

Since the Department anticipates that most car manufacturers will comply with the final rule by installing detachable automatic belts, the cost impacts on new cars will not be large enough to have a significant effect on new car sales. Similarly, the Department does not expect that the design or operation of the automatic restraints will affect new car sales. The Department expects that the detachable automatic belts will be sufficiently acceptable to the public so that their presence in new cars will not be a factor in the purchasing of new cars.

For reasons discussed in the preceding paragraph, the Department does not expect that small organizations or governmental units would be significantly affected. The price increases associated with the installation of detachable automatic belts should not affect the purchasing of new cars by these entities. A somewhat greater effect would occur to the extent that any of these entities decide to purchase airbag cars.

In accordance with the National Environmental Policy Act of 1969, the Department has considered the environmental impacts of this final rule. A Final Environmental Impact Statement (FEIS) is being placed in the public docket simultaneously with the publication of this notice. The FEIS focuses on the environmental impacts associated with the alternative having the largest potential impacts. The alternative incorporated in this final rule will have substantially smaller impacts. The Department has concluded that there is no significant effect on the environment. Since most automatic restraints will be automatic belts, the amount of safety belt webbing manufactured should not change significantly.

The Department finds good cause for making this final rule effective more than one year from the date of issuance, since the possibility exists that a substantial number of cars would comply with other than belt systems. As discussed earlier in this preamble and in the FRIA, the provision of automatic restraints requires significant vehicle modification. Airbag installation requires steering column changes and instrument panel redesign. The lead time to accomplish these alternatives, based on the time necessary to design and test the structural changes and to order tooling, especially for small cars, is several years. Similarly, a multi-year leadtime is necessary to provide automatic belts due to structural changes in seat and door strength and floor pan reinforcements. Passive interiors can require even longer leadtimes if structural modifications to a vehicle's front end, to better absorb the energy of a 30 mph crash, are necessary. The leadtime provided will provide car manufacturers with an effective choice about the type of automatic restraint they install in their cars. Providing less leadtime would limit their choices and tend to necessitate their selecting detachable automatic belts, the means of compliance with the least certainty as to level of benefits, in place of more advanced technology such as airbags or passive interiors.

List of Subjects in 49 CFR Part 571

Motor vehicle safety. Occupant crash protection.

VIII. The Rule

PART 571—FEDERAL MOTOR VEHICLE SAFETY STANDARDS

In consideration of the foregoing, Federal Motor Vehicle Safety Standard No. 208, *Occupant Crash Protection*, (49 CFR 571.208), is amended as set forth below.

§ 571.208 [Amended]

S4.1.2 through S4.1.2.2 of Standard No. 208 are revised to read as follows:

• • • • •

S4.1.2 *Passenger cars manufactured on or after September 1, 1973, and before September 1, 1986.* Each passenger car manufactured on or after September 1, 1973, and after September 1, 1986, shall meet the requirements of S4.1.2.1, S4.1.2.2 or S4.1.2.3. A protection system that meets the requirements of S4.1.2.1 or S4.1.2.2 may be installed at one or more designated seating positions of a vehicle that otherwise meets the requirements of S4.1.2.3.

S4.1.2.1 *First option—frontal/angular automatic protection system. The vehicle shall:*

(a) At each front outboard designated seating position meet the frontal crash protection requirements of S5.1 by means that require no action by vehicle occupants;

(b) At the front center designated seating position and at each rear designated seating position have a Type 1 or Type 2 seat belt assembly that conforms to Standard No. 209 and to S7.1 and S7.2; and

(c) *Either.* (1) Meet the lateral crash protection requirements of S5.2 and the rollover crash protection requirements

of S5.3 by means that require no action by vehicle occupants;
or

(2) At each front outboard designated seating position have a Type 1 or Type 2 seat belt assembly that conforms to Standard No. 209 and S7.1 through S7.3, and that meets the requirements of S5.1 with front test dummies as required by S5.1, restrained by the Type 1 or Type 2 seat belt assembly (or the pelvic portion of any Type 2 seat belt assembly which has a detachable upper torso belt) in addition to the means that require no action by the vehicle occupant.

S4.1.2.2 *Second option—head-on automatic protection system.* The vehicle shall—

(a) At each designated seating position have a Type 1 seat belt assembly or Type 2 seat belt assembly with a detachable upper torso portion that conforms to S7.1 and S7.2 of this standard.

(b) At each front outboard designated seating position, meet the frontal crash protection requirements of S5.1, in a perpendicular impact, by means that require no action by vehicle occupants;

(c) At each front outboard designated seating position, meet the frontal crash protection requirements of S5.1, in a perpendicular impact, with a test device restrained by a Type 1 seat belt assembly; and

(d) At each front outboard designated seating position, have a seat belt warning system that conforms to S7.3

2. S4.1.3 of Standard No. 208 is revised to read as follows:

S4.1.3 *Passenger cars manufactured on or after September 1, 1986, and before September 1, 1989.*

S4.1.3.1 *Passenger cars manufactured on or after September 1, 1986, and before September 1, 1987,*

S4.1.3.1.1 Subject to S4.1.3.1.2 and S4.1.3.4, each passenger car manufactured on or after September 1, 1986, and before

September 1, 1987, shall comply with the requirements of S4.1.2.1, S4.1.2.2 or S4.1.2.3.

S4.1.3.1.2 Subject to S4.1.5, an amount of the cars specified in S4.1.3.1.1 equal to not less than 10 percent of the average annual production of passenger cars manufactured on or after September 1, 1983, and before September 1, 1986, by each manufacturer, shall comply with the requirements of S4.1.2.1.

S4.1.3.2 *Passenger cars manufactured on or after September 1, 1987, and before September 1, 1988.*

S4.1.3.2.1 Subject to S4.1.3.2.2 and S4.1.3.4, each passenger car manufactured on or after September 1, 1987, and before September 1, 1988, shall comply with the requirements of S4.1.2.1, S4.1.2.2 or S4.1.2.3.

S4.1.3.2.2 Subject to S4.1.5, an amount of the cars specified in S4.1.3.2.1 equal to not less than 25 percent of the average annual production of passenger cars manufactured on or after September 1, 1984, and before September 1, 1987, by each manufacturer, shall comply with the requirements of S4.1.2.1.

S4.1.3.3 *Passenger cars manufactured on or after September 1, 1988 and before September 1, 1989.*

S4.1.3.3.1 Subject to S4.1.3.3.2 and S4.1.3.4, each passenger car manufactured on or after September 1, 1988, and before September 1, 1989, shall comply with the requirements of S4.1.2.1, S4.1.2.2 or S4.1.2.3.

S4.1.3.3.2 Subject to S4.1.5, an amount of the cars specified in S4.1.3.3.1 equal to not less than 40 percent of the average annual production of passenger cars manufactured on or after September 1, 1985, and before September 1, 1988, by each manufacturer, shall comply with the requirements of S4.1.2.1.

S4.1.3.4 For the purposes of calculating the numbers of cars manufactured under S4.1.3.1.2, S4.1.3.2.2 or S4.1.3.3.2 to comply with S4.1.2.1, each car whose driver's seating position

will comply with these requirements by means other than any type of seat belt is counted as 1.5 vehicles.

3. Standard No. 208 is amended by adding the following new sections:

S4.1.4 Passenger cars manufactured on or after September 1, 1989. Except as provided in S4.1.5, each passenger car manufactured on or after September 1, 1989, shall comply with the requirements of S4.1.2.1.

S4.1.5 Mandatory seatbelt use laws.

S4.1.5.1 If the Secretary of Transportation determines, by not later than April 1, 1989, that state mandatory safety belt usage laws have been enacted that meet the criteria specified in S4.1.5.2 and that are applicable to not less than two-thirds of the total population of the 50 states and the District of Columbia (based on the most recent Estimates of the Resident Population of States, by Age, Current Population Reports, Series P-25, Bureau of the Census), each passenger car manufactured under S4.1.3 or S4.1.4 on or after the date of that determination shall comply with the requirements of S4.1.2.1, S4.1.2.2 or S4.1.2.3.

S4.1.5.2 The minimum criteria for state mandatory safety belt usage laws are:

(a) Require that each front seat occupant of a passenger car equipped with safety belts under Standard No. 208 has a safety belt properly fastened about his or her body at all times when the vehicle is in forward motion.

(b) If waivers from the safety belt usage requirement are to be provided, permit them for medical reasons only.

(c) Provide for the following enforcement measures:

(1) A penalty of not less than \$25.00 (which may include court costs) for each occupant of a car who violates the belt usage requirement.

(2) A provision specifying that the violation of the belt usage requirement may be used to mitigate damages with respect to any person who is involved in a passenger car accident while violating the belt usage requirement and who seeks in any subsequent litigation to recover damages for injuries resulting from the accident. This requirement is satisfied if there is a rule of law in the State permitting such mitigation.

(3) A program to encourage compliance with the belt usage requirement.

(d) An effective date of not later than September 1, 1989.
(Sec. 103, 119, Pub. L. 89-563, 80 Stat. 718 (15 U.S.C. 1392, 1407))

Issued: July 11, 1984.

Elizabeth H. Dole,

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Relevant Provisions of the Administrative Procedure Act**§ 553. Rule making**

(a) This section applies, according to the provisions thereof, except to the extent that there is involved —

(1) a military or foreign affairs function of the United States; or

(2) a matter relating to agency management or personnel or to public property, loans, grants, benefits, or contracts.

(b) General notice of proposed rule making shall be published in the Federal Register, unless persons subject thereto are named and either personally served or otherwise have actual notice thereof in accordance with law. The notice shall include —

(1) a statement of the time, place, and nature of public rule making proceedings;

(2) reference to the legal authority under which the rule is proposed; and

(3) either the terms or substance of the proposed rule or a description of the subjects and issues involved.

Except when notice or hearing is required by statute, this subsection does not apply —

(A) to interpretative rules, general statements of policy, or rules of agency organization, procedure, or practice; or

(B) when the agency for good cause finds (and incorporates the finding and a brief statement of reasons therefor in the rules issued) that notice and public procedure thereon are impracticable, unnecessary, or contrary to the public interest.

(c) After notice required by this section, the agency shall give interested persons an opportunity to participate in the rule making through submission of written data, views, or arguments with or without opportunity for oral presentation. After consideration of the relevant matter presented, the agency shall incorporate in the rules adopted a concise general statement of their basis and purpose. When rules are required by statute to be made on the record after opportunity for an agency hearing, sections 556 and 557 of this title apply instead of this subsection.

(d) The required publication or service of a substantive rule shall be made not less than 30 days before its effective date, except —

(1) a substantive rule which grants or recognizes an exemption or relieves a restriction;

(2) interpretative rules and statements of policy; or

(3) as otherwise provided by the agency for good cause found and published with the rule.

(e) Each agency shall give an interested person the right to petition for the issuance, amendment, or repeal of a rule.

(Pub. L. 89-554, Sept. 6, 1966, 80 Stat. 383.)

§ 706. Scope of review

To the extent necessary to decision and when presented, the reviewing court shall decide all relevant questions of law, interpret constitutional and statutory provisions, and determine the meaning or applicability of the terms of an agency action. The reviewing court shall —

(1) compel agency action unlawfully withheld or unreasonably delayed; and

(2) hold unlawful and set aside agency action, findings, and conclusions found to be—

(A) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law;

(B) contrary to constitutional right, power, privilege, or immunity;

(C) in excess of statutory jurisdiction, authority, or limitations, or short of statutory right;

(D) without observance of procedure required by law;

(E) unsupported by substantial evidence in a case subject to sections 556 and 557 of this title or otherwise reviewed on the record of an agency hearing provided by statute; or

(F) unwarranted by the facts to the extent that the facts are subject to trial de novo by the reviewing court.

In making the foregoing determinations, the court shall review the whole record or those parts of it cited by a party, and due account shall be taken of the rule of prejudicial error.

(Pub. L. 89-554, Sept. 6, 1966, 80 Stat. 393.)

Relevant Provisions of the National Traffic and Motor Vehicle Safety Act of 1966, as amended

§ 1381. Congressional declaration of purpose

Congress hereby declares that the purpose of this chapter is to reduce traffic accidents and deaths and injuries to persons resulting from traffic accidents. Therefore, Congress determines that it is necessary to establish motor vehicle safety standards for motor vehicles and equipment in interstate commerce; to undertake and support necessary safety research and development; and to expand the national driver register.

(Pub. L. 89-563, §1, Sept. 9, 1966, 80 Stat. 718.)

§ 1391. Definitions

As used in this subchapter —

(1) “Motor vehicle safety” means the performance of motor vehicles or motor vehicle equipment in such a manner that the public is protected against unreasonable risk of accidents occurring as a result of the design, construction or performance of motor vehicles and is also protected against unreasonable risk of death or injury to persons in the event accidents do occur, and includes nonoperational safety of such vehicles.

(2) “Motor vehicle safety standards” means a minimum standard for motor vehicle performance, or motor vehicle equipment performance, which is practicable, which meets the need for motor vehicle safety and which provides objective criteria.

(3) “Motor vehicle” means any vehicle driven or drawn by mechanical power manufactured primarily for use on the public streets, roads and highways, except any vehicle operated exclusively on a rail or rails.

(4) “Motor vehicle equipment” means any system, part, or component of a motor vehicle as originally manufactured or any similar part or component manufactured or sold for replacement or improvement of such system, part, or component or as any accessory, or addition to the motor vehicle, and any device, article, or apparel not a system, part, or component of a motor vehicle (other than medicines, or eyeglasses prescribed by a physician or other duly licensed practitioner), which is manufactured, sold, delivered, offered, or intended for use exclusively to safeguard motor vehicles, drivers, passengers, and other highway users from risk of accident, injury, or death.

(5) “Manufacturer” means any person engaged in the manufacturing or assembling of motor vehicles or motor vehicle equipment, including any person importing motor vehicles or motor vehicle equipment for resale.

(6) "Distributor" means any person primarily engaged in the sale and distribution of motor vehicles or motor vehicle equipment for resale.

(7) "Dealer" means any person who is engaged in the sale and distribution of new motor vehicles or motor vehicle equipment primarily to purchasers who in good faith purchase any such vehicle or equipment for purposes other than resale.

(8) "State" includes each of the several States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, the Virgin Islands, the Canal Zone, and American Samoa.

(9) "Interstate commerce" means commerce between any place in a State and any place in another State, or between places in the same State through another State.

(10) "Secretary" means the Secretary of Transportation.

(11) "Defect" includes any defect in performance, construction, components, or materials in motor vehicles or motor vehicle equipment.

(12) "United States district courts" means the Federal district courts of the United States and the United States courts of the Commonwealth of Puerto Rico, Guam, the Virgin Islands, the Canal Zone, and American Samoa.

(13) "Vehicle Equipment Safety Commission" means the Commission established pursuant to the joint resolution of the Congress relating to highway traffic safety, approved August 20, 1958 (72 Stat. 635), or as it may be hereafter reconstituted by law.

(14) "schoolbus" means a passenger motor vehicle which is designed to carry more than 10 passengers in addition to the driver, and which the Secretary determines is likely to be significantly used for the purpose of transporting primary, preprimary, or secondary school students to or from such schools or events related to such schools; and

(15) "schoolbus equipment" means equipment designed primarily as a system, part, or component of a schoolbus, or any similar part of component manufactured or sold for replacement or improvement of such system, part, or component or as an accessory or addition to a schoolbus.

(Pub. L. 89-563, title I, § 102, Sept. 9, 1966, 80 Stat. 718; Pub. L. 91-265, § 2, May 22, 1970, 84 Stat. 262; Pub. L. 93-492, title I, § 110(a), title II, § 201, Oct. 27, 1974, 88 Stat. 1484.)

§ 1392. Motor vehicle safety standards

(a) Establishment

The Secretary shall establish by order appropriate Federal motor vehicle safety standards. Each such Federal motor vehicle safety standard shall be practicable, shall meet the need for motor vehicle safety, and shall be stated in objective terms.

(b) Applicability of administrative procedure provisions

Subchapter II of chapter 5, and chapter 7, of title 5 shall apply to all orders establishing, amending, or revoking a Federal motor vehicle safety standard under this subchapter.

(c) Effective date of orders

Each order establishing a Federal motor vehicle safety standard shall specify the date such standard is to take effect which shall not be sooner than one hundred and eighty days or later than one year from the date such order is issued, unless the Secretary finds, for good cause shown, that an earlier or later effective date is in the public interest, and publishes his reasons for such finding.

(d) Supremacy of Federal standards: allowable higher standards for vehicles used by Federal or State governments

Whenever a Federal motor vehicle safety standard established under this subchapter is in effect, no State or political subdivision of a State shall have any authority either to establish, or

to continue in effect, with respect to any motor vehicle or item of motor vehicle equipment any safety standard applicable to the same aspect of performance of such vehicle or item of equipment which is not identical to the Federal standard. Nothing in this section shall be construed as preventing any State from enforcing any safety standard which is identical to a Federal safety standard. Nothing in this section shall be construed to prevent the Federal Government or the government of any State or political subdivision thereof from establishing a safety requirement applicable to motor vehicles or motor vehicle equipment procured for its own use if such requirement imposes a higher standard of performance than that required to comply with the otherwise applicable Federal standard.

(e) Amendment and revocation of standards

The Secretary may by order amend or revoke any Federal motor vehicle safety standard established under this section. Such order shall specify the date on which such amendment or revocation is to take effect which shall not be sooner than one hundred and eighty days or later than one year from the date the order is issued, unless the Secretary finds, for good cause shown, that an earlier or later effective date is in the public interest, and publishes his reasons for such finding.

(f) Factors to be considered in prescribing standards

In prescribing standards under this section, the Secretary shall —

(1) consider relevant available motor vehicle safety data, including the results of research, development, testing and evaluation activities conducted pursuant to this chapter;

(2) consult with the Vehicle Equipment Safety Commission and such other State or interstate agencies (including legislative committees) as he deems appropriate;

(3) consider whether any such proposed standard is reasonable, practicable and appropriate for the

particular type of motor vehicle or item of motor vehicle equipment for which it is prescribed; and

(4) consider the extent to which such standards will contribute to carrying out the purposes of this chapter.

(g) Interstate motor carriers and carriers of explosives and other dangerous articles

In prescribing safety regulations covering motor vehicles subject to subchapter II of chapter 105 of title 49 or the Transportation of Explosives Act, as amended (18 U.S.C. 831-835), the Secretary shall not adopt or continue in effect any safety regulation which differs from a motor vehicle safety standard issued by the Secretary under this subchapter, except that nothing in this subsection shall be deemed to prohibit the Secretary from prescribing for any motor vehicle operated by a carrier subject to regulation under either or both of such subchapter and Act, a safety regulation which imposes a higher standard of performance subsequent to its manufacture than that required to comply with the applicable Federal standard at the time of manufacture.

(h) Issuance of initial Federal safety standards

The Secretary shall issue initial Federal motor vehicle safety standards based upon existing safety standards on or before January 31, 1967. On or before January 31, 1968, the Secretary shall issue new and revised Federal motor vehicle safety standards under this subchapter.

(i) Schoolbus and schoolbus equipment safety standards; study and report to Congress

(1)(A) Not later than 6 months after October 27, 1974, the Secretary shall publish proposed Federal motor vehicle safety standards to be applicable to schoolbuses and schoolbus equipment. Such proposed standards shall include minimum standards for the following aspects of performance:

- (i) Emergency exits.
- (ii) Interior protection for occupants.
- (iii) Floor strength.
- (iv) Seating systems.
- (v) Crash worthiness of body and frame (including protection against rollover hazards).
- (vi) Vehicle operating systems.
- (vii) Windows and windshields.
- (viii) Fuel systems.

(B) Not later than 15 months after October 27, 1974, the Secretary shall promulgate Federal motor vehicle safety standards which shall provide minimum standards for those aspects of performance set out in clauses (i) through (viii) of subparagraph (A) of this paragraph, and which shall apply to each schoolbus and item of schoolbus equipment which is manufactured in or imported into the United States on or after April 1, 1977.

(2) The Secretary may prescribe regulations requiring that any schoolbus be test-driven by the manufacturer before introduction into commerce.

(3) Not later than six months after July 8, 1976, the Secretary shall conduct a study and report to Congress on (A) the factors relating to the schoolbus vehicle which contribute to the occurrence of schoolbus accidents and resultant injuries, and (B) actions which can be taken to reduce the likelihood of occurrence of such accidents and severity of such injuries. Such study shall consider, among other things, the extent to which injuries may be reduced through the use of seat belts and other occupant restraint systems in schoolbus accidents, and an examination of the extent to which the age of schoolbuses increases the likelihood of accidents and resultant injuries.

(Pub. L. 89-563, title I, § 103, Sept. 9, 1966, 80 Stat. 719; Pub. L. 89-670, Oct. 15, 1966, 80 Stat. 931; Pub. L. 93-492, title II, § 202, Oct. 27, 1974, 88 Stat. 1484; Pub. L. 94-346, §§ 2, 3, July 8, 1976, 90 Stat. 815; Pub. L. 97-331, § 3, Oct. 15, 1982, 96 Stat. 1619.)

§ 1394. Judicial review of orders establishing standards; additional evidence before Secretary; certified copy of transcript

(a) Review of safety standard orders

(1) In a case of actual controversy as to the validity of any order under section 1392 of this title, any person who will be adversely affected by such order when it is effective may at any time prior to the sixtieth day after such order is issued file a petition with the United States court of appeals for the circuit wherein such person resides or has his principal place of business, for a judicial review of such order. A copy of the petition shall be forthwith transmitted by the clerk of the court to the Secretary or other officer designated by him for that purpose. The Secretary thereupon shall file in the court the record of the proceedings on which the Secretary based his order, as provided in section 2112 of title 28.

(2) If the petitioner applies to the court for leave to adduce additional evidence, and shows to the satisfaction of the court that such additional evidence is material and that there were reasonable grounds for the failure to adduce such evidence in the proceeding before the Secretary, the court may order such additional evidence (and evidence in rebuttal thereof) to be taken before the Secretary, and to be adduced upon the hearing, in such manner and upon such terms and conditions as to the court may seem proper. The Secretary may modify his findings as to the facts, or make new findings, by reason of the additional evidence so taken, and he shall file such modified or new findings, and his recommendation, if any, for the modification or setting aside of his original order, with the return of such additional evidence.

(3) Upon the filing of the petition referred to in paragraph (1) of this subsection, the court shall have jurisdiction to review the order in accordance with chapter 7 of title 5 and to grant appropriate relief as provided in such section.

(4) The judgment of the court affirming or setting aside, in whole or in part, any such order of the Secretary shall be final,

subject to review by the Supreme Court of the United States upon certiorari or certification as provided in section 1254 of title 28.

(5) Any action instituted under this subsection shall survive, notwithstanding any change in the person occupying the office of Secretary of any vacancy in such office.

(6) The remedies provided for in this subsection shall be in addition to and not in substitution for any other remedies provided by law.

(b) Copies of transcripts

A certified copy of the transcript of the record and proceedings under this section shall be furnished by the Secretary to any interested party at his request, and payment of the costs thereof, and shall be admissible in any criminal, exclusion of imports, or other proceeding arising under or in respect of this subchapter, irrespective of whether proceedings, with respect to the order have previously been initiated or become final under subsection (a) of this section.

(Pub. L. 89-563, title I, § 105, Sept. 9, 1966, 80 Stat. 720.)

§ 1410b. Occupant restraint systems

(a) Amendment of Federal motor vehicle safety standard numbered 208; effective date

Not later than 60 days after October 27, 1974, the Secretary shall amend the Federal motor vehicle safety standard numbered 208 (49 CFR 571.208), so as to bring such standard into conformity with the requirements of paragraphs (1), (2), and (3) of subsection (b) of this section. Such amendment shall take effect not later than 120 days after October 27, 1974.

(b) Federal motor vehicle safety standard requirements

After the effective date of the amendment prescribed under subsection (a) of this section:

(1) No Federal motor vehicle safety standard may —

(A) have the effect of requiring, or

(B) provide that a manufacturer is permitted to comply with such standard by means of,

any continuous buzzer designed to indicate that safety belts are not in use, or any safety belt interlock system.

(2) Except as otherwise provided in paragraph (3), no Federal motor vehicle safety standard respecting occupant restraint systems may —

(A) have the effect of requiring, or

(B) provide that a manufacturer is permitted to comply with such standard by means of,

an occupant restraint system other than a belt system.

(3)(A) Paragraph (2) shall not apply to a Federal motor vehicle safety standard which provides that a manufacturer is permitted to comply with such standard by equipping motor vehicles manufactured by him with either —

(i) a belt system, or

(ii) any other occupant restraint system specified in such standard.

(B) Paragraph (2) shall not apply to any Federal motor vehicle safety standard which the Secretary elects to promulgate in accordance with the procedure specified in subsection (c) of this section, unless it is disapproved by both Houses of Congress by concurrent resolution in accordance with subsection (d) of this section.

(C) Paragraph (2) shall not apply to a Federal motor vehicle safety standard if at the time of promulgation of such standard

(i) the 60-day period determined under subsection (d) of this

section has expired with respect to any previously promulgated standard which the Secretary has elected to promulgate in accordance with subsection (c) of this section, and (ii) both Houses of Congress have not by concurrent resolution within such period disapproved such previously promulgated standard.

- (c) **Federal motor vehicle safety standard promulgation procedure; rule making requirement; data, views or arguments; presentation opportunity; transcript; notification of Congressional Committees; data, views, or arguments of Members of Congress; transmittal of standard to Congress and Congressional Committees**

The procedure referred to in subsection (b)(3) (B) and (C) of this section in accordance with which the Secretary may elect to promulgate a standard is as follows:

(1) The standard shall be promulgated in accordance with section 1392 of this title, subject to the other provisions of this subsection.

(2) Section 553 of title 5 shall apply to such standard; except that the Secretary shall afford interested persons an opportunity for oral as well as written presentation of data, views, or arguments. A transcript shall be kept of any oral presentation.

(3) The chairman and ranking minority members of the House Energy and Commerce Committee and the Senate Commerce, Science, and Transportation Committee shall be notified in writing of any proposed standard to which this section applies. Any Member of Congress may make an oral presentation of data, views, or arguments under paragraph (2).

(4) Any standard promulgated pursuant to this subsection shall be transmitted to both Houses of Congress, on the same day and to each House while it is in session. In addition, such standard shall be transmitted to the chairmen and ranking minority members of the committees referred to in paragraph (3).

d. Concurrent resolution of disapproval during prescribed period; Federal motor vehicle safety standard effective upon expiration of such period.

(1) A standard which the Secretary has elected to promulgate in accordance with subsection (c) of this section shall not be effective if, during the first period of 60 calendar days of continuous session of Congress after the date of transmittal to Congress, both Houses of Congress pass a concurrent resolution the matter after the resolving clause of which reads as follows: "The Congress disapproves the Federal motor vehicle safety standard transmitted to Congress on _____, 19____."; (the blank spaces being filled with date of transmittal of the standard to Congress). If both Houses do not pass such a resolution during such period, such standard shall not be effective until the expiration of such period (unless the standard specifies a later date).

(2) For purposes of this section —

(A) continuity of session of Congress is broken only by an adjournment sine die; and

(B) the days on which either House is not in session because of an adjournment of more than 3 days to a day certain are excluded in the computation of the 60-day period.

(e) Judicial review of Federal motor vehical safety standard

This section shall not impair any right which any person may have to obtain judicial review of a Federal motor vehicle safety standard.

(f) Definitions

For purposes of this section:

(1) The term "safety belt interlock" means any system designed to prevent starting or operation of a motor vehicle if one or more occupants of such vehicle are not using safety belts.

(2) The term "belt system" means an occupant restraint system consisting of integrated lap and shoulder belts for front outboard occupants and lap belts for other occupants. With respect to (A) motor vehicles other than passenger vehicles, (B) convertibles, and (C) open-body type vehicles, such term also includes an occupant restraint system consisting of lap belts or lap belts combined with detachable shoulder belts.

(3) The term "occupant restraint system" means a system the principal purpose of which is to assure that occupants of a motor vehicle remain in their seats in the event of a collision or rollover. Such term does not include a warning device designed to indicate that seat belts are not in use.

(4) The term "continuous buzzer" means a buzzer other than a buzzer which operates only during the 8 second period after the ignition is turned to the "start" or "on" position.

(Pub. L. 89-563, title I, § 125, as added Pub. L. 93-492, title I, § 109, Oct. 27, 1974, 88 Stat. 1482, and amended S. Res. 4, Feb. 4, 1977; H. Res. 549, Mar. 25, 1980.)